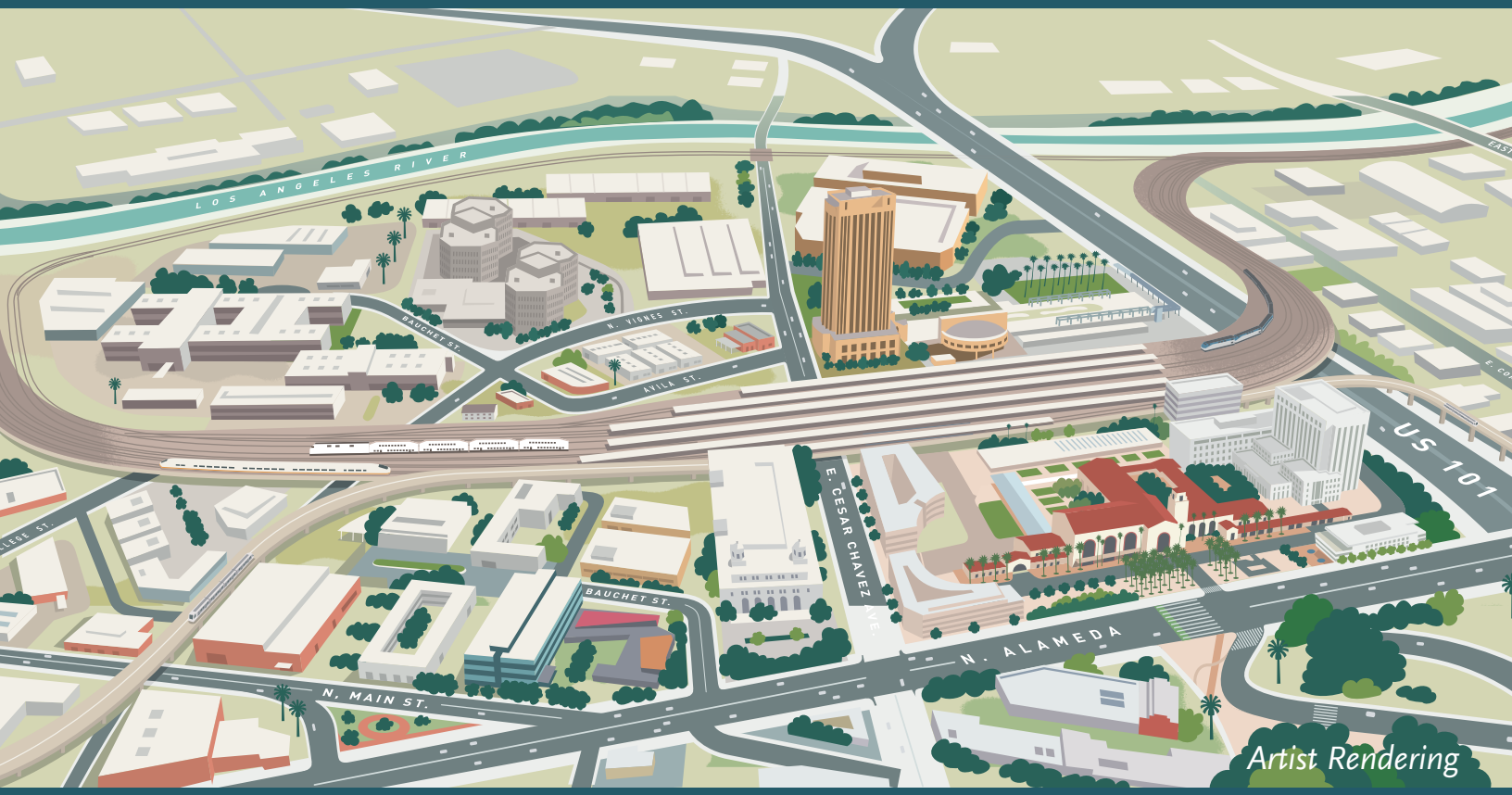
Link Union Station

Draft Environmental Evaluation of Malabar Yard Mitigation

June 2024



The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by the State of California pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated July 23, 2019, and executed by the Federal Railroad Administration and the State of California.

Metro

CALIFORNIA High-Speed Rail Authority

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ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
ACM	asbestos-containing materials
AD	anno domini
APE	area of potential effects
APN	Assessor Parcel Number
ASTM	American Society for Testing and Materials
ATP	Archaeological Treatment Plan
Basin Plan	Water Quality Control Plan for the Los Angeles Region
BMP	best management practices
BNSF	BNSF Railway
BP	before present
BSA	Biological Study Area
C&D	Construction and demolition
CAFÉ	Corporate Average Fuel Economy
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Occupational Safety and Health Administration
CALGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CGP	Construction General Permit
CHSRA	California High-Speed Rail Authority
CMP	Congestion Management Program
CO	carbon monoxide
CO2e	carbon dioxide equivalent
CPUC	California Public Utilities Commission
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DHHS	Department of Health and Human Services
DTSC	Department of Toxic Substances Control
EIA	Energy Information Administration
EIS	environmental impact statement
EFC	Equity Focus Community
EJ	environmental justice
EO	Executive Order
EPA	Environmental Protection Agency
EQ Zapp	California Earthquake Hazards Zone Application
ESA	Environmental Site Assessment
FBI	Federal Bureau of Investigation
FCAA	Federal Clean Air Act
FEMA	Federal Emergency Management Agency

FHWA	Federal Highway Administration
FR	Federal Register
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FTIP	Federal Transportation Improvement Program
GHG	greenhouse gas
GIS	Geographic Information System
HASP	Health and Safety Plans
HMMP	hazardous materials management plan
HSR	high-speed rail
I-	Interstate
IPaC	Information, Planning, and Consultation System
IGP	Industrial General Permit
IRP	Integrated Resource Plan
LACOFD	Los Angeles County Fire Department
LACM	Natural History Museum of Los Angeles County
LAUS	Los Angeles Union Station
LBP	lead-based paints
L_{dn}	day-night average sound level
L_{eq}	equivalent noise level
LEP	limited English proficiency
LHMP	Local Hazard Mitigation Plan
LID	low impact development
Link US	Link Union Station
Lmax	maximum sound level
LOS	Level of Service
LWCF	Land and Water Conservation Fund
MBTA	Migratory Bird Treaty Act
Metro	Los Angeles County Metropolitan Transportation Authority
mg/L	milligrams/liter
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organizations
MS4	Municipal Separate Storm Sewer Systems
MSWMP	Municipal Stormwater Management Program
MT	metric tons
Mw	moment magnitude
NAAQS	National Ambient Air Quality Standards
NBT	northbound through
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO2	nitrogen dioxide
NOI	Notice of Intent
NRHP	National Register of Historic Places
NPDES	National Pollutant Discharge Elimination System
NTSB	National Transportation Safety Board
O3	ozone
OHP	California Office of Historic Preservation
OSHA	Occupational Safety and Health Administration
OWJ	officials with jurisdiction
pH	potential of hydrogen

Project or proposed action	Link Union Station Project
PM10	particles of 10 micrometers or less
PM2.5	particles of 2.5 micrometers or less
PMP	Paleontological Mitigation Plan
PPV	peak particle velocity
REC	Recognized environmental conditions
RCRA	Resource Conservation and Recovery Act
ROW	right-of-way
RSA	Resources Survey Area
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SBT	southbound through
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SEIR	Supplemental Environmental Impact Report
SHPO	California State Historic Preservation Officer
SO2	sulfur dioxide
SIP	State Implementation Plan
SPCCC	Spill Prevention, Control, and Countermeasure
SSP	system safety program
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TCE	temporary construction easement
TCEP	Trade Corridor Enhancement Program
TMP	Traffic Management Plan
TSCA	Toxic Substances Control Act
U.S.	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UWMP	Urban Water Management Plan
V/C	volume-to-capacity
VdB	vibration velocity in decibels
VIA	Visual Impact Assessment
VMR	Virtual Meeting Room
VOC	Volatile Organic Compound
VPU	Vernon Public Utilities
VMT	vehicle miles traveled
WBL	westbound left
WBT	westbound through
WEAP	worker environmental awareness program
WMP	Waste Management Plan

ES.0 Executive Summary

The Los Angeles County Metropolitan Transportation Authority (Metro), as the owner of Los Angeles Union Station (LAUS), is proposing infrastructure improvements in the vicinity of LAUS as part of the Link Union Station (Link US) Project (Project or proposed action) to address existing capacity constraints at LAUS. As identified in Chapter 2.0, Alternatives and Design Options Considered and Chapter 3.3, Transportation of the Environmental Impact Statement (EIS)/Supplemental Environmental Impact Report (SEIR), the Build Alternative would result in the acquisition and permanent loss of approximately 5,500 feet of storage track capacity at the north end of the BNSF Railway (BNSF) West Bank Yard. The California High-Speed Rail Authority (CHSRA) and Metro have identified railroad improvements to the BNSF Malabar Yard in the City of Vernon to offset the loss of storage track capacity at the BNSF West Bank Yard.

Railroad improvements to the BNSF Malabar Yard may result in potential adverse effects on the environment. CHSRA and Metro prepared this documentation as a supporting appendix to the EIS/SEIR to disclose potential impacts of the Malabar Yard railroad improvements, in compliance with the National Environmental Policy Act (NEPA; 42 United States Code [USC] Section 4321 et seq.), the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508)[1], Federal Railroad Administration (FRA) Procedures for Considering Environmental Impacts (FRA's Environmental Procedures) (*Federal Register* [FR] 64(101), 28545-28556, May 26, 1999)[2], 23 USC Section 139, and the NEPA Assignment Memorandum of Understanding (MOU). Pursuant to the requirements of the MOU between the FRA and State of California, FRA's Environmental Procedures are used to determine environmental effects.

Project Location and Study Area

BNSF's Malabar Yard is approximately 8 acres located on the Harbor Subdivision approximately 3 miles south of LAUS in the City of Vernon, California. The Malabar Yard railroad improvements are located in the vicinity of Malabar Yard primarily on 46th Street and 49th Street, between Santa Fe Avenue and Soto Street, in the City of Vernon, California.

[1] The Council on Environmental Quality (CEQ) issued new regulations, effective April 20, 2022, updating the National Environmental Policy Act (NEPA) implementing procedures at 40 Code of Federal Regulations (CFR) Parts 1500–1508. However, because this environmental document was initiated prior to the effective date, it is not subject to the new regulations, and CHSRA is relying on the regulations as they existed on the date of the initial Notice of Intent, May 31, 2016. Therefore, all citations to CEQ regulations in this environmental document refer to the 1978 regulations and the 1986 amendment, 51 *Federal Register* (FR) 15618 (Apr. 25, 1986).

[2] While this environmental document was being prepared, the Federal Railroad Administration (FRA) adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

The Malabar Yard study area is bound on the north by Vernon Avenue, to the east by Soto Street, to the south by Fruitland Avenue, and to the west by Santa Fe Avenue. Roadways in the vicinity of the proposed railroad improvements include Pacific Boulevard, Seville Avenue, Santa Fe Avenue, Fruitland Avenue, Soto Street, 46th Street, and 49th Street.

Malabar Yard Railroad Improvement Design Options - Summary Overview

An overview of the Malabar Yard railroad improvements and the design options considered at each location are described below:

- ***49th Street Closure –*** Closure of the at-grade railroad crossing at 49th Street would accommodate storage capacity at the BNSF Malabar Yard by approximately 3,350 track feet. Closure of 49th Street facilitates storage of empty intermodal train car sets that are no longer able to be stored at the BNSF West Bank Yard. Two design options are being considered for a closure of the at-grade crossing at 49th Street, as described below:
    - 49th Street Closure Design Option 1 – Offset Cul-de-Sac: this design option includes a typical cul-de-sac configuration with a rounded curve edge, with the offset being the portion of the roadway that encroaches into private property south of the existing roadway.
    - 49th Street Closure Design Option 2 – Hammerhead Cul-de-Sac: this design option includes a non-typical cul-de-sac configuration in the shape of a “T,” with areas on each side of the existing roadway for large trucks to maneuver in and out of adjacent private properties.
- ***46th Street Connector –*** An approximately 1,000-foot segment of new track between two existing track segments would provide a dedicated connection for freight trains serving local customers to travel between BNSF’s Malabar Yard and BNSF’s Los Angeles Junction. Two design options are being considered for a new track connection along 46th Street as described below:
    - 46th Street Connector Design Option 1 – Southern Alignment: this design option includes an alignment that encroaches into multiple private properties on the south side of 46th Street to avoid narrowing and/or reconfiguration of the existing roadway between Pacific Boulevard and Seville Avenue.
    - 46th Street Connector Design Option 2 – Northern Alignment: this design option includes an alignment that avoids most private properties on the south side of 46th Street and includes narrowing and/or reconfiguration of the existing roadway between Pacific Boulevard and Seville Avenue.

Summary of Effects and Mitigation Measures

For each of the environmental topic areas considered in Section 3.2 through 3.15, Table ES-1 summarizes the environmental effects, mitigation measures, and denotes if effects would remain

adverse after implementation of the design options considered for the Malabar Yard railroad improvements with proposed mitigation measures, if applicable. Detailed analyses of all environmental topic areas considered and the associated NEPA determinations are provided in the Environmental Consequences subsections of Section 3.2 through 3.15 of this document for each design option considered at both locations (49th Street and 46th Street).

The Environmental Justice and Section 4(f) determinations for the Malabar Yard railroad improvements are provided in narrative format below consistent with how the executive summary analysis for the Build Alternative is presented.

Environmental Justice Determination

As discussed in Section 3.16, Environmental Justice, the Malabar Yard railroad improvements would not result in adverse effects related to land use and planning, visual quality and aesthetics, air quality and global climate change, noise and vibration, biological and wetland resources, floodplains, hydrology, and water quality, geology, soils, and seismicity, hazardous waste and materials, public utilities and energy, cultural and paleontological resources, and economic and fiscal impacts. Mitigation measures, best management practices (BMP), and compliance with federal, state, and local requirements would minimize these adverse effects. No adverse effect on environmental justice (EJ) communities within the EJ study area would occur.

Effects related to transportation, safety and security, and socioeconomics and communities affected could remain adverse under NEPA even after implementation of the applicable mitigation measures; however, EJ communities are not located within Malabar Yard study area where the Malabar Yard railroad improvements would be implemented. Based the location of EJ communities relative to the Malabar Yard study area, potential roadway hazards from vehicle queuing along Seville Avenue and the associated transportation, safety and security, and impacts on community facilities would primarily be experienced by the traveling public and people who work in the City of Vernon, which includes both EJ and non-EJ populations. The potential adverse effects related to transportation, safety, and community facilities would not be predominantly borne by an EJ community, nor would they be appreciably more severe or greater in magnitude than adverse effects on non-minority populations or non-low income populations.

Section 4(f) Determination

As discussed in Section 3.17, Section 4(f), the preliminary Section 4(f) determination for the Malabar Yard railroad improvements is that no Section 4(f) use would occur for the National Register of Historic Properties-eligible Solar Manufacturing Corporation Building in Vernon, California.

No direct or indirect impacts that could result in a permanent incorporation, temporary occupancy, or constructive use of this property have been identified and the improvements do not hinder the preservation of the property. Therefore, no use of this resource would be required to implement the Malabar Yard railroad improvements, and no further analysis is required. On November 20, 2023, the State Historic Preservation Officer (SHPO) concurred with the findings and conclusions outlined in the *Link US Finding of Effect Report* (Appendix M of the Link US EIS/SEIR).

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Section 3.2, Land Use and Planning			
Topic 3.2-A: Alteration of land use patterns	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	No Adverse Effect
Topic 3.2-B: Compatibility with existing or planned land uses	*Construction* Adverse Effect • Construction activities for any combination of design options for Malabar Yard railroad improvements would result in temporary access disruptions to existing businesses, which could change the travel path to businesses by customers and delivery vehicles during construction. This temporary disruption in existing traffic circulation could result in land use incompatibilities from access restrictions to nearby businesses when road closures are required. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* **MY TR-1 Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements:** During the final engineering phase and at least 30 days prior to implementation of the Malabar Yard railroad improvements, a construction TMP shall be prepared by the contractor and reviewed and approved by Metro and the City of Vernon. Any identified street closure schedules in the construction TMP shall be approved by the City of Vernon and coordinated among the construction contractor, Metro, BNSF, private businesses, public transit and bus operators, the bicycle community, and emergency service providers to minimize construction-related vehicular and non-vehicular traffic impacts during the peak hour. During planned closures, traffic shall be rerouted to adjacent streets via clearly marked detours and notice shall be provided 5 business days in advance to applicable parties (emergency service providers, public transit and bus operators, businesses, bicycle community, and organizers of special events). The TMP shall identify proposed closure schedules and detour routes, as well as construction traffic routes, including haul truck routes, and preferred delivery/haul-out locations and hours to avoid heavily congested areas during peak hours, where feasible and to maintain safe bicycle and pedestrian access during construction. The following provisions shall be included in the TMP: • Traffic flow shall be maintained, particularly during peak hours, to the degree feasible. • Access to adjacent businesses shall be maintained during business hours via existing or temporary driveways, as feasible. • Metro, the City of Vernon, or the contractor shall post advance-notice signs prior to construction in areas where access to local businesses could be affected. Metro shall provide signage to indicate new ways to access businesses and community facilities, if affected by construction. • Metro shall notify City of Vernon 5 business days in advance of street closures, detours, or temporary lane reductions.	No Adverse Effect
Topic 3.2-C: Physical division of an established community	*Construction* No Adverse Effect *Operations* No Adverse Effect	No Mitigation Measures are required.	No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Indirect No Adverse Effect		
Topic 3.2-D: Conflict with land use plans policies or local land use controls	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	No Adverse Effect
Section 3.3, Transportation			
Topic 3.3-A: Traffic delays that limit the effectiveness of the traffic circulation system	*Construction* Adverse Effect • The applicable V/C ratio threshold would be exceeded at two intersections (Intersection #5: Vernon Avenue/Santa Fe Avenue and Intersection #6: Santa Fe Avenue/Pacific Boulevard). *Operations* Adverse Effect • The applicable V/C ratio threshold would be exceeded at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard). *Indirect Effects* No Adverse Effect	*Construction* Implement Mitigation Measure MY TR-1. **MY TR-2** **Temporary Restriping and Adding a Right-turn Overlap Phase in Westbound Direction of the Vernon Avenue/Santa Fe Avenue Intersection:** During the final engineering phase and at least 30 days prior to implementation of the Malabar Yard railroad improvements, Metro and BNSF shall obtain approval from the City of Vernon to temporarily restripe the westbound shared through/right-turn lane to a westbound right-turn-only lane at Vernon Avenue and add a right-turn overlap phase in the same direction. The temporary restriping shall remain in place for the duration of construction. Upon completion of the Malabar Yard railroad improvements, the lane shall be returned to its original condition as a shared through/right-turn lane and the right-turn overlap phase shall be eliminated. **MY TR-3** **Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection:** During the final engineering phase and at least 30 days prior to implementation of the Malabar Yard railroad improvements, Metro and BNSF shall obtain approval from the City of Vernon to restripe one eastbound through lane to an eastbound turn lane at Vernon Avenue. *Operations* Implement Mitigation Measure MY TR-3. **MY TR-4** **Restriping of the Pacific Boulevard/Fruitland Avenue Intersection (Future Horizon Year 2040):** In the Future Horizon Year (2040), Metro and BNSF, in coordination with the City of Vernon, shall restripe the northbound shared through/right-turn lane to a right-turn-only lane and a through lane at Pacific Boulevard. **MY TR-5** **Add a New Vehicular Lane on the Fruitland Avenue Roadway Segment between Santa Fe Avenue and Pacific Boulevard (Future Horizon Year 2040):** In the Future Horizon Year (2040), Metro and BNSF, in coordination with the City of Vernon, shall add a new westbound vehicular lane on Fruitland Avenue.	No Adverse Effect
Topic 3.3-B: Design of existing roadways and intersections	*Construction* Adverse Effect	*Construction* Implement Mitigation Measure MY TR-1.	Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
causing increased hazards	• Existing roadways and intersections may be subject to temporary detours and lane blockages at multiple locations resulting in temporary construction-related roadway hazards to motorists, pedestrians, and bicyclists. *Operations* Adverse Effect • The New Railroad Crossing #5 at the intersection of Seville Avenue and 46th Street would introduce a potential roadway hazard due to queuing that would cause southbound vehicular traffic to extend across 46th Street. On Seville Avenue south of 46th Street, two separate sets of gate arms proposed near each other would introduce a potential roadway hazard due to northbound and southbound vehicle queuing. *Indirect* No Adverse Effect	*Operations* **MY TR-6** **Obtain Required Approvals for At-Grade Railroad Crossings:** For all new and existing at-grade railroad crossing modifications, Metro and BNSF shall obtain required approvals from the City of Vernon and submit a Formal Application to the CPUC in accordance with the process outlined in the Rules of Practice and Procedure (effective May 2021). In accordance with the provisions of CPUC Rule 2.4 *CEQA Compliance*, the Formal Application shall include the Link US Final EIR (June 2019) and Final EIS/SEIR.	
Topic 3.3-C: Emergency Access	*Construction* Adverse Effect • Implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #5: Vernon Avenue/Santa Fe Avenue and Intersection #6: Santa Fe Avenue/Pacific Boulevard); which may also impede access for emergency responders throughout construction. In addition, these two intersections are along a designated disaster route. *Operations* Adverse Effect • Implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard), which may impede access for emergency responders throughout operations. Intersection #6 is located along a designated disaster route. • A potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may also impede access for emergency responders. *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measures MY TR-1 through TR-3. *Operations* Implement Mitigation Measures MY TR-3 through TR-6.	Adverse Effect
Topic 3.3-D: Public transit, bicycle, or pedestrian facilities	*Construction* Adverse Effect • Construction of any combination of design options for the Malabar Yard railroad improvements would require temporary road closures within the traffic study area and may potentially affect public transit and other non-motorized modes of travel. Construction of any combination of design options would require detour routes and temporary traffic disruptions that may cause decreased performance for transit operators or subject pedestrians and bicyclists to hazardous conditions near work zones.	*Construction* Implement Mitigation Measure MY TR-1. *Operations* Implement Mitigation Measure MY TR-6.	Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Operations Adverse Effect • A potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may also cause schedule delays to transit services or disruption of pedestrian and bicycle access. *Indirect* No Adverse Effect		
Topic 3.3-E: Freight	*Construction* No Adverse Effect *Operations* Beneficial Effect • Operation of any combination of design options for the Malabar Yard railroad improvements would increase operational efficiency through 2040 for BNSF because local box and tanker train traffic would be redistributed from the north entrance of Malabar Yard to the east entrance (using the new 46th Street Connector) to and from Los Angeles Junction. *Indirect* Beneficial Effect • Any combination of design options for the Malabar Yard railroad improvements would increase operational efficiency by eliminating the need to operate on the same track as passenger trains. The increase in operational efficiency is considered a long-term benefit.	No Mitigation Measures are required.	No Adverse Effect
Section 3.4, Visual Quality and Aesthetics			
Topic 3.4-A: Visual character or quality	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Topic 3.4-B: Light or Glare	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	No Adverse Effect
Section 3.5, Air Quality and Global Climate Change			
Topic 3.5-A: General Conformity de minimis levels for the South Coast Air Basin	*Construction* No Adverse Effect *Operations* Beneficial Effect • Benefits from operation of Malabar Yard railroad improvements include reduced intermodal railcar miles of travel resulting in reduced fuel consumption by rail and associated rail emissions. In addition, the Malabar Yard railroad improvements would improve mainline rail network capacity to support regional freight rail growth thereby avoiding the diversion of rail served demand to long haul trucking. The reduction in truck VMT results in reduced fuel consumption by truck and associated truck emissions. From a localized perspective, implementation of the 46th Street Connector would shift some freight rail activity away from sensitive receptors, such as the Vernon City School and the residences on Furlong Place. *Indirect* Beneficial Effect • Implementation of the railroad improvements would aid in the overall reduction of criteria air pollutant emissions through regional VMT reductions.	*Construction* Although not required, Malabar Yard Mitigation Measure AQ-1 and MY AQ-2 are applicable because Malabar Yard railroad improvements would be constructed at the same time as construction of the Build Alternative. When combined, there would be an exceedance of NOx during construction. Implementation of MY AQ-2 would reduce NOx emissions below the *de minimis* levels. MY AQ-1 is a requirement of the Link US Final EIR for the Build Alternative and SCAQMD to reduce daily fugitive dust emissions and associated air quality impacts. **MY AQ-1** **Fugitive Dust Control:** In compliance with SCAQMD Rule 403, during clearing, grading, earthmoving, or excavation operations, fugitive dust emissions shall be controlled by regular watering or other dust preventive measures using the following procedures, as specified in SCAQMD Rule 403: • Minimize land disturbed by clearing, grading, and earthmoving, or excavation operations to prevent excessive amounts of dust. • Provide an operational water truck on site at all times; use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the Project work areas; watering shall occur at least twice daily with complete coverage, preferably in the late morning and after work is done. • Suspend grading and earthmoving when wind gusts exceed 25 miles per hour unless the soil is wet enough to prevent dust plumes. • Securely cover trucks when hauling materials on or off site. • Stabilize the surface of dirt piles if not removed immediately. • Limit vehicular paths and limit speeds to 15 miles per hour on unpaved surfaces and stabilize any temporary roads. • Minimize unnecessary vehicular and machinery activities. • Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway.	No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		• Revegetate or stabilize disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities. The following measures shall also be implemented to reduce construction emissions: • The construction contractor shall prepare and update on a monthly basis a comprehensive inventory list of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) (i.e., make, model, engine year, horsepower, emission rates) that could be used an aggregate of 40 or more hours throughout the duration of construction to demonstrate how the construction fleet is consistent with the requirements of Metro's Green Construction Policy. • Ensure that all construction equipment is properly tuned and maintained. • Minimize idling time to 5 minutes, whenever feasible, which saves fuel and reduces emissions. • Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators, whenever feasible. • Arrange for appropriate consultations with CARB or SCAQMD to determine registration and permitting requirements prior to equipment operation at the site and obtain the California Air Resources Board (CARB) Portable Equipment Registration with the state or a local district permit for portable engines and portable engine-driven equipment units used at the Project work site, with the exception of on-road and off-road motor vehicles, as applicable. These control techniques shall be included in Project specifications and shall be implemented by the construction contractor. **MY AQ-2** **Compliance with U.S. EPA's Tier 4 Final Exhaust Emission Standards and Renewable Diesel Fuel for Off-Road Equipment:** In compliance with Metro's Green Construction Policy, all off-road diesel powered construction equipment greater than 50 horsepower shall comply with U.S. EPA's Tier 4 final exhaust emission standards (40 CFR Part 1039). In addition, if not already supplied with a factory-equipped diesel particulate filter, all construction equipment shall be outfitted with best available control technology devices certified by the CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine, as defined by CARB regulations. In addition to the use of Tier 4 equipment, all off-road construction equipment shall be fueled using 100 percent renewable diesel.	
Topic 3.5-B: Annual GHG emissions in excess of 25,000 MT of CO2e	*Construction* No Adverse Effect *Operations* Beneficial Effect	No Mitigation Measures are required.	No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	• Any combination of design options for the Malabar Yard railroad improvements would result in a net reduction in regional CO_2 emissions because it would reduce train miles for empty intermodal railcars and reduce truck VMT. *Indirect* Beneficial Effect • Implementation of any combination of design options for the Malabar Yard railroad improvements would aid in the overall reduction of GHG emissions through regional VMT reductions.		
Section 3.6, Noise and Vibration			
Topic 3.6-A: Noise levels in excess of established general plan, noise ordinance, or agency standards **Topic 3.6-C:** Ambient noise levels	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	No Adverse Effect
Topic 3.6-B: Ground-borne vibration and ground-borne noise levels	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	No Adverse Effect
Section 3.7, Biological and Wetland Resources			
Topic 3.7-A: Nesting birds protected by the MBTA	*Construction* Adverse Effect • Construction of the Malabar Yard railroad improvements has potential to affect nesting birds protected by the MBTA that are present in the BSA during construction. Direct effects on an active nest, including removal of mature trees could result in moderate reductions in population size of nesting birds protected by the MBTA. *Operations* No Adverse Effect *Indirect* Adverse Effect	*Construction and Indirect* **MY BIO–1** **MBTA species:** During construction, vegetation removal shall be conducted outside of the bird nesting season (February 1 through September 30) to the extent feasible. If vegetation removal cannot be conducted outside of the nesting season, a CDFW-approved qualified avian biologist shall conduct preconstruction surveys to locate active nests within 72 hours prior to vegetation removal in each area with suitable nesting habitat, including surrounding buildings, eaves, telephone poles, bushes, or trees. If nesting birds are found during preconstruction surveys, an exclusionary buffer (150 feet for passerines and 500 feet for raptors) suitable to prevent nest disturbance shall be established by the biologist. The buffer may be adjusted based on species-specific and site-specific conditions as determined by the qualified biologist or consultation from the wildlife agencies. This buffer shall be clearly marked in the field by construction personnel under the guidance of the biologist, and construction or	No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	• Indirect effects on an active nest may include increased risk of construction noise above ambient noise levels, vibration, excess dust, night lighting, and human encroachment, all of which may result in nest failure.	vegetation removal shall not be conducted within the buffer until the biologist determines that the young have fledged or the nest is no longer active. Exclusionary devices (hard surface materials, such as plywood or plexiglass, flexible materials, such as vinyl, or a similar mechanism that keeps birds from building nests) shall be installed over suitable nest sites at buildings, or other structures that will be removed before the nesting season (February 1 through September 30) to prevent nesting at the bridges, buildings, or other structures by bridge- and crevice-nesting birds (i.e., swifts and swallows). Netting shall not be used as an exclusionary material because it can injure or kill birds, which would be in violation of the MBTA. Removal of partially constructed nests shall be conducted under the guidance and observation of a qualified biologist. Removal of partially constructed swallow nests shall be repeated as frequently as necessary to prevent nest completion. Removal of nest materials and exclusion device installation shall be monitored by a qualified biologist. Such exclusion efforts shall be continued to keep the structures free of swallows until October or the completion of construction. Metro's Resident Engineer or designated contractor shall ensure that all Project personnel and contractors who will be on site during construction complete mandatory training conducted by the Project Biologist or a designated qualified biologist. Any new Project personnel or contractors that come on board after the initiation of construction shall also be required to complete the mandatory Worker Environmental Awareness Program training before they commence with work. The training shall advise workers of potential impacts on jurisdictional resources. At a minimum, the training shall include the following topics: (1) occurrences of special-status species and special-status vegetation communities in the Project area (including vegetation communities subject to USACE, CDFW, and Regional Water Quality Control Board [RWQCB] jurisdiction), (2) the purpose for resource protection; (3) protective measures to be implemented in the field, including strictly limiting activities, vehicles, equipment, and construction materials to the fenced to avoid jurisdictional resource areas in the field (i.e., avoid areas delineated on maps or on the Project site by fencing); (4) environmentally responsible construction practices; and (5) the protocol to resolve conflicts that may arise at any time during the construction process.	
Topic 3.7-B: Conflict with a tree preservation ordinance	*Construction* Adverse Effect • Construction of the Malabar Yard railroad improvements could result in the removal or disturbance of native tree species protected under the City of Vernon's Tree Protection Bylaw #4152. *Operations* No Adverse Effect *Indirect* Adverse Effect • Trenching, grading, soil compaction, and the placement of fill or impervious surfaces within the driplines of protected trees could lead to root damage ultimately resulting in death of the tree.	*Construction and Indirect* **MY BIO-2** **Protected Trees:** Prior to construction, the locations and sizes of trees shall be identified and overlaid on Project footprint maps for the selected design options to determine which trees may be protected in accordance with the City of Vernon's Tree Protection Bylaw #4152. This applies to all trees within the City of Vernon that have a diameter greater than 8 centimeters at 1 meter above the ground at the base of the tree. Any protected trees that would undergo damage (including pruning or removal of certain limbs), destruction, or removal as a result of the Malabar Yard railroad improvements would require a tree cutting/removal permit from the City of Vernon. Any protected trees that must be removed due to Project construction shall be replaced by a new tree. As a condition to the granting of a tree cutting/removal permit, Metro's designated contractor shall be required to provide the following to the City of Vernon Community Development Director: (a) A security in the form of a cash deposit or letter of credit to secure the full amount of the cost of replacing the trees that are to be destroyed pursuant to the said permit; and (b) A plan or plans identifying:	No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		i. The trees proposed to be cut or removed; ii. The trees proposed to be retained; and iii. The trees proposed to be provided in replacement of the trees that are to be cut or removed.	
Section 3.8, Floodplains, Hydrology, and Water Quality			
Topic 3.8-A: Drainage patterns, soil erosion, and siltation	*Construction* Adverse Effect • Construction could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas, resulting in substantial runoff and erosion on adjacent properties. *Operations* Adverse Effect • In areas where existing impervious surfaces would be replaced with pervious ballasted trackbed, there would be an anticipated reduction in the rate of stormwater runoff entering the public storm drain system. However, there is still a potential for an adverse effect on drainage if not properly designed for and managed throughout operation. For example, some storm drains may receive more runoff than under existing conditions by concentrating runoff to certain areas. *Indirect* Adverse Effect • During construction and operations, implementation of any combination of design options for the Malabar Yard railroad improvements may result in potential soil erosion and may alter drainage patterns as it may be necessary for the contractor to reroute drainage around one or more construction areas.	*Construction* **MY HWQ-1** **Prepare and Implement a SWPPP for the Malabar Yard Railroad Improvements:** During construction, Metro or BNSF shall comply with the provisions of the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002) and any subsequent amendments (Order No. 2010-0014-DWQ, and Order No. 2012-0006-DWQ), which are currently in effect. However, during construction of the Malabar Yard railroad improvements, Order Number 2022-0057-DWQ may be in effect. This permit was adopted on September 8, 2022, and will become effective on September 1, 2023. Construction activities shall not commence until a waste discharger identification number is received from the Stormwater Multiple Application and Report Tracking System. The contractor shall implement all required aspects of the SWPPP during Project construction. Metro or BNSF shall comply with the Risk Level 2 sampling and reporting requirements of the construction general permit (CGP). A rain event action plan shall be prepared and implemented by a qualified SWPPP developer within 48 hours prior to a rain event of 50 percent or greater probability of precipitation according to the National Oceanic and Atmospheric Administration. A Notice of Termination shall be submitted to the SWRCB within 90 days of completion of construction and stabilization of the site. *Operations* **MY HWQ-5** **Final Water Quality BMP Selection (City of Vernon and Railroad ROW) for the Malabar Yard Railroad Improvements:** For the Malabar Yard railroad improvements in the City of Vernon, Metro or BNSF shall comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2021-0105, NPDES No. CAS004004), effective September 11, 2021 (known as the Phase I Permit). Metro or BNSF shall also prepare a final LID report in accordance with the City of Vernon's *Low Impact Development Guidance Manual*. This document shall identify the required BMPs to be in place prior to Project operation and maintenance. *Indirect* Implement Mitigation Measures MY HWQ-1 and MY HWQ-5.	No Adverse Effect
Topic 3.8-B: Stormwater	*Construction* Adverse Effect • Chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete related waste may be spilled or leaked and have the potential to be transported via stormwater into the Los Angeles River.	*Construction* Implement Mitigation Measure MY HWQ-1. **MY HAZ-1** **Prepare a Construction Hazardous Materials Management Plan (HMMP):** Prior to construction, an HMMP shall be prepared by the contractor that outlines provisions for safe storage, containment, and disposal of chemicals and hazardous materials, contaminated soils, and contaminated groundwater used or exposed during construction, including the proper	No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Operations Adverse Effect • Any reconstruction of impervious surfaces could affect stormwater runoff if not properly designed for and managed throughout operation. *Indirect* Adverse Effect • Construction of any combination of design options for the Malabar Yard railroad improvements may result in changes to existing drainage patterns and could result in in exceedances of the capacity of existing storm drains and stormwater facilities serving the area.	locations for disposal. The HMMP shall be prepared to address the area of the Project footprint for the selected design options, and include, but not be limited to, the following: • A description of hazardous materials and hazardous wastes used (29 CFR 1910.1200). • A description of handling, transport, treatment, and disposal procedures, as relevant for each hazardous material or hazardous waste (29 CFR 1910.120). • Preparedness, prevention, contingency, and emergency procedures, including emergency contact information (29 CFR 1910.38). • A description of personnel training including, but not limited to: (1) recognition of existing or potential hazards resulting from accidental spills or other releases; (2) implementation of evacuation, notification, and other emergency response procedures; and (3) management, awareness, and handling of hazardous materials and hazardous wastes, as required by their level of responsibility (29 CFR 1910). • Instructions on keeping Safety Data Sheets on site for each on-site hazardous chemical (29 CFR 1910.1200). • Identification of the locations of hazardous material storage areas, including temporary storage areas, which shall be equipped with secondary containment sufficient in size to contain the volume of the largest container or tank (29 CFR 1910.120). *Operations* Implement Mitigation Measure MY HWQ-5. *Indirect* Implement Mitigation Measures MY HAZ-1, MY HWQ-1, and MY HWQ-5.	
Topic 3.8-C: Flooding	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	No Adverse Effect
Topic 3.8-D: Water quality standards and waste discharge requirements	*Construction* Adverse Effect • Construction activities could result in an adverse effect on water quality and exceed stormwater and non-stormwater discharge requirements if runoff is not properly managed. Improper handling of concrete mix could be carried away by runoff and also result in degradation of surface water. • Surface runoff exposure to soils containing these contaminants could reduce water quality of the Los Angeles River at Reach 2.	*Construction* Implement Mitigation Measure MY HWQ-1. **MY HWQ-2 Comply with Local Dewatering Requirements for the Malabar Yard Railroad Improvements:** The contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0095, NPDES Permit No. CAG994004), effective July 6, 2013 (known as the Dewatering Permit), as they relate to discharge of non-stormwater dewatering wastes. The	No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Operations Adverse Effect • Minor amounts of metals from brake dust, oil and grease would originate from train cars, which could discharge these and other chemical pollutants into existing drainage systems. *Indirect* Adverse Effect • For Design Option 1 at 46th Street, potential impacts could occur on two sites that currently have an active Waste Discharger Identification number under the Industrial General Permit (IGP), which includes the Flores Design (APN 6308-004-012, south side of 46th Street, between Pacific Boulevard and Seville Avenue) and Arcadia Leonis (APN 6308-004-012, southwest corner of 46th Street and Seville Avenue). These sites include active permits with provisions to treat stormwater discharges that include pollutants, and updates to the permit may be required to continue to operate under the same permit. If these processes are not continued, industrial stormwater may not be treated and could negatively affect the storm drain system.	two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall obtain a permit from the RWQCB and/or the City of Vernon. **MY HWQ-3** **Comply with Local Dewatering Requirements for Contaminated Sites for the Malabar Yard Railroad Improvements:** The contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Treated Groundwater from Investigation and/or Cleanup of VOC Contaminated Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0043, NPDES Permit No. CAG914001), effective April 7, 2013 (known as the Dewatering Permit for contaminated sites), for discharge of non-stormwater dewatering wastes from contaminated sites impacted during construction. The two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall require a permit from the RWQCB and/or the City of Vernon. *Operations* Implement Mitigation Measures MY HWQ-5. *Indirect* **MY HWQ-4** **Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses for the Malabar Yard Railroad Improvements:** Metro or BNSF shall comply with the NPDES General Permit for Stormwater Discharges Associated with Industrial Activities (IGP; Order No. 2014-0057-DWQ, as amended by Order No. 2015-0122-DWQ, NPDES No. CAS000001) for demolished, relocated, or new industrial-related properties impacted by the railroad improvements. This shall include preparation of industrial SWPPP(s), as applicable.	
Section 3.9, Geology, Soils, and Seismicity			
Topic 3.9-A: Seismic ground shaking or seismic-related ground failure, including liquefaction	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* Adverse Effect • The Malabar Yard study area includes soils that are potentially liquefiable. Construction activities could lead to indirect effects associated with liquefaction, including displacements, and bearing capacity failures.	*Indirect* **MY GEO-1** **Prepare Final Geotechnical Report:** During final design, a final geotechnical report shall be prepared by a licensed geotechnical engineer (to be retained by Metro). The final geotechnical report shall address and include site-specific design recommendations on the following: • Site preparation; • Soil bearing capacity; • Appropriate sources and types of fill; • Liquefaction; • Corrosive soils; • Structural foundations; and • Grading practices. The recommendations shall mitigate the risk of seismic ground shaking and ground failure, including liquefaction. In addition to the recommendations for the conditions listed above, the report shall include results of subsurface testing of soil and groundwater conditions and shall provide recommendations as to the appropriate foundation designs that are consistent with the latest version of the CBC, as applicable at the time building and grading permits are pursued. Additional recommendations shall be included in that report to provide guidance for	No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		design of Malabar Yard railroad improvements in accordance with the *Manual for Railway Engineering*, and applicable city codes. The Project shall be designed and constructed to comply with the site-specific recommendations as provided in the final geotechnical report to be prepared.	
Topic 3.9-B: Soil erosion	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	No Adverse Effect
Topic 3.9-C: Collapse due to the use of corrosive unstable geologic units or soils	*Construction* Adverse Effect • Due to the limited amount of site-specific geotechnical information available, construction activities may be subject to hydrocollapse. *Operations* Adverse Effect • Corrosion can weaken structures built on corrosive soils, potentially causing damage to foundations and buried pipelines when corrosive soils react with materials gradually over several decades. *Indirect* Adverse Effect • Over the Project's lifetime, there is potential for corrosive soils to cause damage to foundations and buried pipelines.	*Construction, Operations, and Indirect* Implement Mitigation Measure MY GEO-1.	No Adverse Effect
Topic 3.9-D: Expansive soils	*Construction* Adverse Effect • Construction of the Malabar Yard railroad improvements would occur in an area with potentially expansive soils, which could result in uplift pressures that could lead to structural damage to both track improvements and signal, safety, and civil improvements. *Operations* Adverse Effect • The Malabar Yard railroad improvements would occur in an area with potentially expansive soils which could lead to structural damage from uplift pressures including sidewalk and pavement cracks and track damage.	*Construction, Operations, and Indirect* Implement Mitigation Measure MY GEO-1.	No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Indirect Adverse Effect • Over the Project's lifetime, expansive soils within the Malabar Yard study area may cause structural damage from uplift pressures including sidewalk and pavement cracks and track damage.		
Section 3.10, Hazardous Waste and Materials			
Topic 3.10-A: Transport, use, or disposal of hazardous materials	*Construction* Adverse Effect • During construction, the use of hazardous materials and substances would be required, and hazardous wastes would be generated. If a spill of hazardous materials were to occur, the accidental release could pose a hazard to construction employees, the public, and the environment. • If contaminated soil and/or groundwater is encountered and is not adequately managed, potential hazards could be generated by the routine transport, use, and disposal of contaminated soils and/or contaminated groundwater during construction of the Malabar Yard railroad improvements. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measure MY HAZ-1.	No Adverse Effect
Topic 3.10-B: Risk of hazardous materials release into the environment	*Construction* Adverse Effect • Two high risk REC sites were identified in close proximity of the Malabar Yard railroad improvements and could result in potential exposure to contaminated soil and/or groundwater or migration of contaminants (e.g., by groundwater) during construction activities. • One REC site contains petroleum hydrocarbons and the second REC site contains chlorinated solvents (perchloroethylene and trichloroethylene). An accidental release of volatile contaminant vapors during excavation could pose a health hazard to construction employees, the public, and the environment. • An accidental release of asbestos containing materials or lead during demolition activities could pose a health hazard to construction employees, the public, and the environment. *Operations* No Adverse Effect *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measures MY HAZ-1. **MY HAZ-2** **Prepare Phase II ESA:** Prior to final design, a Phase II Environmental Site Investigation shall be prepared to focus on likely sources of contamination (based on completed Phase I ESA) for properties within the Project footprint for the selected design options that would be affected by excavation. Phase II activities shall consist of: • Collection of soil, groundwater, and soil vapor samples from borings, for geologic and environmental analysis and collection/submittal of samples to an environmental laboratory for implementation of an analytical program. Sampling shall be based on the findings of the Phase I ESA for the Project area. • Laboratory analysis of samples for contaminants of concern, which vary by location, but may include VOCs, PAHs, total petroleum hydrocarbons (TPH), polychlorinated biphenyls, and CCR Title 22 metals. A Phase II ESA Report shall be prepared that summarizes the results of the drilling and sampling activities, and provides recommendations based on the investigation's findings. Metro shall implement the Phase II ESA recommendations. The Phase II ESA shall be conducted under the direct supervision of a Professional Geologist, licensed in the State of California, with expertise in ESAs and evaluation of contaminated sites. **MY HAZ-3** **Prepare a General Construction Soil Management Plan:** Prior to construction, the contractor shall prepare a General Construction Soil Management Plan that includes general	No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		provisions for how soils will be managed within the Project footprint for the selected design options for the duration of construction. Any soil imported to the Project site for backfill shall be certified clean per DTSC's *Information Advisory-Clean Imported Fill Material* prior to use. General soil management controls to be implemented by the contractor and the following topics shall be addressed within the Soil Management Plan: • General worker health and safety procedures; • Dust control; • Management of soil stockpiles; • Traffic control; and • Stormwater erosion control using BMPs. **MY HAZ-4** **Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP):** Prior to construction, the contractor shall prepare parcel-specific Soil Management Plans for known contaminated sites for submittal and approval by DTSC. The plans shall include specific hazards and provisions for how soils will be managed for known contaminated sites. The nature and extent of contamination is expected to vary widely across the Project footprint for the selected design options, and the findings of a Phase II ESA will provide additional details on what is expected to be encountered during construction. The parcel-specific Soil Management Plan shall provide parcel-specific requirements addressing the following: • Soil disposal protocols; • Protocols governing the discovery of unknown contaminants; and • Management of soil on properties within the Project footprint of the selected design options with known contaminants. Prior to construction on individual properties with known contaminants, parcel-specific HASPs shall also be prepared by contractors undertaking work activities to be submitted to and approved by DTSC. The HASPs shall be prepared to meet OSHA requirements, Title 29 of the CFR 1910.120 and CCR Title 8, Section 5192, and all applicable federal, state, and local regulations and agency ordinances related to the management, transport, and disposal of contaminated media during implementation of work and field activities. The HASPs shall be signed and sealed by a Certified Industrial Hygienist, licensed by the American Board of Industrial Hygiene. In addition to general construction soil management plan provisions, the following parcel-specific HASP provisions shall also be implemented: • Training requirements for site workers who may be handling contaminated material. • Chemical exposure hazards in soil, groundwater, or soil vapor that are known to be present on a property. • Mitigation and monitoring measures that are protective of site worker and public health and safety. Prior to construction, Metro or BNSF shall coordinate soil management measures and reporting activities with stakeholders and regulatory agencies with jurisdiction, to establish an appropriate monitoring and reporting program that meets all federal, state, and local laws for the Project and each of the contaminated sites.	

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		MY HAZ-5 **Halt Construction Work if Potentially Hazardous Materials are Encountered:** Contractors shall stop work and follow procedures outlined in the HMMP and soil management plans immediately upon discovery if potentially hazardous materials are encountered. Contractors shall follow all applicable local, state, and federal regulations regarding discovery, notification, response, disposal, and remediation for hazardous materials, underground storage tanks, and ACM (e.g., transit pipes) encountered during the construction process. **MY HAZ-6** **Pre-Demolition Investigation:** Prior to the demolition of any structures, a survey shall be conducted for the presence of hazardous building materials, such as ACMs, LBPs, and other materials falling under the Universal Waste requirements. An asbestos survey report signed by a Certified Asbestos Consultant will be prepared prior to any demolition or renovation in accordance with Rule 1403 (d)(1)(A) of the SCAQMD. The results of this survey shall be submitted to Metro, and applicable stakeholders as deemed appropriate by Metro, and submitted with an application for a Rule 1403 permit. If any hazardous building materials are discovered, prior to demolition of any structures, a plan for proper removal shall be prepared in accordance with applicable OSHA and the Los Angeles County Department of Public Health requirements. The contractor performing the work shall be required to implement the removal plan and shall be required to have a C-21 license in the State of California and possess an A or B classification. If asbestos-related work is required, the contractor or their subcontractor shall be required to possess a California Contractor License (Asbestos Certification). Prior to any demolition activities, the contractor shall be required to secure the site and ensure the disconnection of utilities.	
Topic 3.10-C: Hazardous materials sites	*Construction* Adverse Effect • Potential exposure to contaminated soil and/or groundwater from REC sites with high-risk ratings could pose a health hazard to construction employees, the public, and the environment. *Operations* No Adverse Effect *Indirect* Adverse Effect • Potential indirect effects could occur in the event hazardous materials migrate into other properties while construction is occurring.	*Construction* Implement Mitigation Measures MY HAZ-1 and MY HAZ-2. *Indirect* Implement Mitigation Measures MY HAZ-2 through MY HAZ-4.	No Adverse Effect
Section 3.11, Public Utilities and Energy			
Topic 3.11-A: Water supply and infrastructure	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Topic 3.11-B: Drainage capacity and infrastructure	*Construction* Adverse Effect • Construction-related changes in drainage patterns, including changes to the volume and rate of runoff, may result in exceedances of the capacity of existing storm drains and stormwater facilities serving the area. *Operations* Adverse Effect • In areas where existing impervious surfaces would be replaced with pervious ballasted trackbed, drainage could be affected in a manner that could change the rate of stormwater runoff entering the public storm drain system. *Indirect* Adverse Effect • Potential alterations of drainage patterns and the rate of stormwater runoff entering the public storm drain system could indirectly affect water quality and existing drainage route connections.	*Construction* Implement Mitigation Measure MY HWQ-1. *Operations* Implement Mitigation Measure MY HWQ-5. *Indirect* Implement Mitigation Measures MY HWQ-1 and MY HWQ-5.	No Adverse Effect
Topic 3.11-C: Solid waste collection and landfill capacity	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	No Adverse Effect
Topic 3.11-D: Telecommunications infrastructure	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	No Adverse Effect
Topic 3.11-E: Energy demand, infrastructure, and compliance with initiatives for renewable energy or energy efficiency	*Construction* No Adverse Effect *Operations* No Adverse Effect	No Mitigation Measures are required.	No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Indirect Beneficial Effect • The Malabar Yard railroad improvements would accommodate current and anticipated future increases in rail/freight for the region, resulting in an indirect beneficial effect on energy resources.		
Section 3.12, Cultural and Paleontological Resources			
Topic 3.12-A: Built environment and unknown archaeological historic properties	*Construction* Adverse Effect • Ground-disturbing construction activities would occur in areas with elevated potential to contain buried archaeological sites. *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect impacts may result from increased accessibility to buried archaeological resources (such as artifacts) by construction personnel that could lead to resource looting or vandalism activities. Additionally, damage to improperly curated archaeological resources may occur.	*Construction and Indirect* **MY CUL-1** **Archaeological Treatment Plan (ATP).** Prior to construction, Metro shall retain a qualified archaeologist, herein defined as a person who meets the Secretary of Interior's Professional Qualification Standards in Archaeology and is experienced in analysis and evaluation of the types of material anticipated to be encountered, to develop an ATP that details the procedures to address accidental discoveries. The California SHPO and consulting Native American tribes shall be afforded 30 days to review and comment on the draft ATP, consistent with the timeline for consultation under Section 106 of the NHPA (36 CFR 800). Once relevant comments are addressed, the revised ATP shall be submitted to SHPO for 30-day review and concurrence. The ATP shall be prepared consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP *Archaeological Resources Management Reports: Recommended Contents and Format* (OHP 1990). The ATP shall include, at a minimum, the following elements: • **Research Design:** The ATP shall include a robust research design to be used in applying the NRHP eligibility criteria for evaluating the significance of accidentally discovered archaeological features and deposits, and in recovering scientific data from those features and deposits that are determined to be significant. The research design shall discuss the results of previous archaeological research in the Los Angeles Basin, present research questions relevant to the types of features and deposits that are expected to be encountered and outline the data requirements necessary to successfully address the research questions. • **Archaeological and Native American Monitoring.** The ATP shall include the locations and protocols to be used for archaeological and Native American monitoring during construction based on final design. The ATP shall rely on OSHA requirements regarding the safety of monitoring locations and the potential for encountering contaminated soils or other hazards. • **Provisions for the Accidental Discovery of Archaeological Features or Deposits.** The ATP shall include provisions for the accidental discovery of archaeological features or deposits during construction. These provisions shall include stop-work protocols, notification procedures, and methodology for assessing the nature and significance of the find. If the feature or deposit is determined to be significant, the data recovery and analysis procedures outlined for known resources shall be implemented. • **Provisions for the Accidental Discovery of Human Remains, Associated and Unassociated Funerary Objects, Sacred Objects, and Objects of Cultural Patrimony.** The ATP shall contain provisions for the accidental discovery of human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony. These provisions shall include stop-work protocols, notification	No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		procedures, and provisions for the treatment (including reburial in an appropriate location) of the human remains and associated objects in a respectful manner and in accordance with applicable regulations, as determined through consultation with the appropriate Native American tribes. • **Cultural Resource Worker Environmental Awareness Program (WEAP) Training.** The ATP shall include provisions for the development of cultural resource WEAP training to be delivered by a qualified archaeologist to all ground-disturbing construction personnel, including education on the consequences of unauthorized collection of artifacts, a review of discovery protocols, and explanation of mitigation requirements for work in archaeologically sensitive areas. • **Standards for Reporting.** The ATP shall include standards for reporting the results of archaeological testing, evaluation, data recovery, and monitoring activities. All reports shall be consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP's *Archaeological Resources Management Reports: Recommended Contents and Format* (OHP 1990). • **Guidelines for Curation.** The ATP shall include guidelines for the ownership and curation of archaeological data and collections, in compliance with 36 CFR 79.	
Topic 3.12-B: Paleontological Resources	*Construction* Adverse Effect • Deeper excavations have the potential to affect paleontologically sensitive deposits of older Quaternary alluvium (depth not reported in cross-section but can be encountered at depths as shallow as 6 feet below the natural ground surface in the Malabar Yard vicinity). *Operations* No Adverse Effect *Indirect* Adverse Effect • Indirect effects may result from increased accessibility by construction personnel to fossils buried in subsurface sediments through construction activities leading to potential resource looting or vandalism activities.	*Construction and Indirect* **MY PAL-1** **Paleontological Mitigation Plan (PMP).** It is possible that Quaternary older alluvium or Puente Formation, which are geologic units that have a high paleontological potential, will be impacted during construction if excavation activities extend to depths as shallow as 6 feet below the natural ground surface. Metro shall retain a qualified paleontologist to prepare a PMP using final excavation plans to determine where these geologic units would be impacted. Metro shall implement the PMP prior to the start of any ground-disturbing construction activities if it is determined that such activities would encounter Quaternary older alluvium or Puente Formation. The PMP shall include site-specific mitigation recommendations and specific procedures for construction monitoring and fossil discovery. The PMP shall include a requirement for full-time paleontological monitoring if excavations will occur within native Quaternary older alluvium and/or Puente Formation, with the exception of pile-driving activities. While pile-driving activities for foundation construction may impact paleontologically sensitive sediments due to the need for foundations to be within firm strata, this activity is not conducive to paleontological monitoring, as fossils would be destroyed by the construction process. Monitoring is not recommended for excavations that affect only artificial fill and Quaternary younger alluvium (Qa/Qal). The PMP shall detail a discovery protocol in the event that potentially significant paleontological resources are encountered during construction. For example, the contractor shall halt activities in the immediate area (within a 25-foot radius of the discovery) and Metro's qualified paleontologist shall make an immediate evaluation of the significance and appropriate treatment of the encountered paleontological resources in accordance with the PMP. If necessary, appropriate salvage measures and mitigation measures shall be developed in consultation with the responsible agencies and in conformance with federal and state guidelines and best practices. Construction activities may continue in other areas of the Project site while evaluation and treatment of the discovered paleontological resources take	No Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
		place. Work may not resume in the discovery area until it has been authorized by Metro's qualified paleontologist. **MY PAL-2** **Paleontological WEAP Training.** Metro's qualified paleontologist shall prepare paleontological resource-focused WEAP training that shall be delivered to all ground-disturbing construction personnel, including a review of protocols to follow in the event of a fossil discovery, as identified in the PMP. **MY PAL-3** **Curation.** Metro shall arrange for the curation in perpetuity of significant fossils recovered during construction at an accredited repository, such as the Natural History Museum of Los Angeles County. These fossils shall be prepared, identified, and catalogued for curation (but not prepared for a level of exhibition) by Metro's qualified paleontologist. This includes removal of all or most of the enclosing sediment to reduce the specimen volume, increase surface area for the application of consolidants or preservatives, provide repairs and stabilization of fragile or damaged areas on a specimen, and allow taxonomic identification of the fossils. All field notes, photographs, stratigraphic sections, and other data associated with the recovery of the specimens shall be deposited with the institution receiving the specimens.	
Section 3.13, Economic and Fiscal Impacts			
Topic 3.13-A: Employment, income, and tax revenues	*Construction, Operations, and Indirect* Beneficial Effect • Implementation of any combination of design options for the Malabar Yard railroad improvements would generate employment, labor income, and tax revenues. o Design Option 1 is expected to generate 143 temporary jobs (representing $9.4 million in labor income) during the construction period. It is expected to create $25.6 million in output (including $13.8 million in value added) and $3.3 million in total federal, state, and local tax revenues. o Design Option 2 is expected to generate 151 temporary jobs (representing $9.7 million in labor income) during the construction period. It is expected to create $27.1 million in output (including $14.5 million in value added) and $3.5 million in total federal, state, and local tax revenues.	No Mitigation Measures are required.	Beneficial Effect
Section 3.14, Safety and Security			
Topic 3.14-A: Community safety services	*Construction* Adverse Effect • Temporary roadway closures and detours could cause potential delays in response times for emergency vehicles. Implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #5: Vernon Avenue/Santa Fe Avenue and Intersection #6: Santa Fe Avenue/Pacific Boulevard); which may also affect response times, or performance objectives of emergency responders. *Operations* Adverse Effect • Implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland	*Construction* Implement Mitigation Measures MY TR-1 through MY TR-3. *Operations* Implement Mitigation Measures MY TR-3 through MY TR-6.	Adverse Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Avenue between Santa Fe Avenue and Pacific Boulevard), which may also affect response times, or performance objectives of emergency responders during operations. • A potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may affect response times. *Indirect* No Adverse Effect		
Topic 3.14-B: Safety conditions	*Construction* Adverse Effect • There is a potential for safety risks to pedestrians and bicyclists due to the temporary detours and lane blockages that would affect local streets. Roadway modifications could affect accessibility to private driveways, parking areas, loading docks, sidewalks, and bike lanes during construction. *Operations* Adverse Effect • A potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may expose pedestrians, bicyclists, or vehicles to accidents/incidents. *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measure MY TR-1. *Operations* Implement Mitigation Measure MY TR-6.	Adverse Effect
Topic 3.14-C: Security conditions	*Construction* No Adverse Effect *Operations* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	No Adverse Effect

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Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
Section 3.15, Socioeconomics and Communities Affected			
Topic 3.15-A: Community facilities	*Construction* Adverse Effect • Temporary road closures and detours could cause potential delays for emergency vehicles to access Stacy Medical Center. In addition, implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #5: Vernon Avenue/Santa Fe Avenue and Intersection #6: Santa Fe Avenue/Pacific Boulevard). *Operations* Adverse Effect • Implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard), which may also affect access to the Stacy Medical Center. • A potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may also affect access to the Stacy Medical Center. *Indirect* No Adverse Effect	*Construction* Implement Mitigation Measures MY TR-1 through TR-3. *Operations* Implement Mitigation Measures MY TR-3 through MY TR-6.	Adverse Effect
Topic 3.15-B: Government services	*Construction* No Adverse Effect *Operation* No Adverse Effect *Indirect* No Adverse Effect	No Mitigation Measures are required.	No Adverse Effect
Topic 3.15-C: Business displacements and the economy	*Construction* Beneficial Effect • Up to 143 and 151 temporary jobs are anticipated to be generated, along with $9.4 to $9.7 million is labor income, and $3.3 to $3.5 million in total federal, state, and local tax revenues generated.	No Mitigation Measures are required.	Beneficial Effect

Table ES-1. Summary of NEPA Analysis for the Malabar Yard Railroad Improvements

Environmental Topic Considered	Impact Evaluation	Mitigation Measure	NEPA Effect Determination After Implementation of Mitigation Measures
	Operations No Adverse Effect *Indirect* Beneficial Effect • Wages paid to workers in construction trades or supporting industries would be spent on other goods and services and provide a benefit to the economy, both locally and, to a lesser degree, regionally. • Operation of the 46th Street Connector would facilitate enhanced goods movement and freight service to existing and potentially new customers in the City of Vernon.		

Notes:

ACM=asbestos-containing materials; ATP=Archaeological Treatment Plan; BMP=best management practice; CARB=California Air Resources Board; CBC=California Building Code; CCR=California Code of Regulations; CDFW=California Department of Fish and Wildlife; CFR=Code of Federal Regulations; CGP=construction General permit; CO2e=carbon monoxide equivalent; DTSC=Department of Toxic Substances Control; ESA=Environmental Site Assessment; GHG=greenhouse gas; HASP=Health and Safety Plan; HMMP=Hazardous Materials Management Plan; IGP=Industrial General Permits; LBP=lead-based paint; LID=low impact development; MBTA=Migratory Bird Treaty Act; Metro=Los Angeles County Metropolitan Transportation Authority; MS4=municipal separate storm sewer systems; MT=metric ton; NEPA=National Environmental Policy Act; NAHP=National Historic Preservation Act; NOx=nitrogen oxides; NPDES=National Pollutant Discharge Elimination System; NRHP=National Register of Historic Places; OHP=Office of Historic Preservation; OSHA=Occupational Safety and Health Administration; PAHs=polynuclear aromatic hydrocarbon; U.S. EPA=United States Environmental Protection Agency; PM2.5=particulate matter less than 2.5 microns; PM10=particulate matter less than 10 microns; PMP=Paleontological Mitigation Plan; REC=recognized environmental condition; RWQCB=Regional Water Quality Control Board; SCAQMD=South Coast Air Quality Management District; SHPO=State Historic Preservation Officer; SWPPP=stormwater pollution prevention plan; SWRCB=State Water Resources Control Board; TMP=Traffic Management Plan; TPH=total petroleum hydrocarbons; V/C=volume-to-capacity; VOC=volatile organic compound; WEAP=worker environmental awareness program

1.0 Introduction

The Los Angeles County Metropolitan Transportation Authority (Metro), as the owner of Los Angeles Union Station (LAUS), is proposing infrastructure improvements in the vicinity of LAUS as part of the Link Union Station (Link US) Project (Project or proposed action) to address existing capacity constraints at LAUS. As identified in Chapter 2.0, Alternatives and Design Options Considered and Chapter 3.3, Transportation of the Environmental Impact Statement (EIS)/Supplemental Environmental Impact Report (SEIR), the Build Alternative would result in the acquisition and permanent loss of approximately 5,500 feet of storage track capacity at the north end of the BNSF Railway (BNSF) West Bank Yard (majority of reduced capacity would occur north of First Street). Approximately 24,645 feet of track capacity at the BNSF West Bank Yard would not be affected. Figure 1-1 depicts the location of the BNSF West Bank Yard where the acquisition and permanent loss of storage track capacity would occur.

The BNSF West Bank Yard is located adjacent to the Los Angeles River and provides storage for empty intermodal train car sets (train of rail cars designed specifically to carry intermodal freight containers but which currently are not loaded with intermodal freight containers) that are transported from the Ports of Los Angeles and Long Beach to BNSF's Hobart Yard in the City of Commerce. The length of train which can be stored and the proximity of the BNSF West Bank Yard to the BNSF Hobart Yard limits the available time slots which can be occupied by freight trains on the main lines for transporting empty train sets between the two yards. The acquisition and permanent loss of approximately 5,500 feet of storage track capacity at the BNSF West Bank Yard is considered an adverse effect to freight railroad operations. As detailed below, two criteria were used to evaluate potential sites to offset the loss in storage noted above. The first criteria being location in proximity to, and west of, BNSF Hobart/Commerce Intermodal Yards as this is necessary to not impact freight and passenger operations on the BNSF San Bernardino main line tracks. The second criteria being the ability to replace lost storage capacity in kind or preserve the current levels of freight rail operations. The California High-Speed Rail Authority (CHSRA) and Metro have identified railroad improvements to the BNSF Malabar Yard in the City of Vernon to offset the loss of storage track capacity at the BNSF West Bank Yard. Railroad improvements to the BNSF Malabar Yard would be constructed by BNSF and may result in potential adverse effects on the environment; therefore, this technical memorandum provides a detailed description of the Malabar Yard railroad improvements in the City of Vernon and a full environmental evaluation of potential effects of the Malabar Yard mitigation for freight and displacement impacts at BNSF West Bank Yard.

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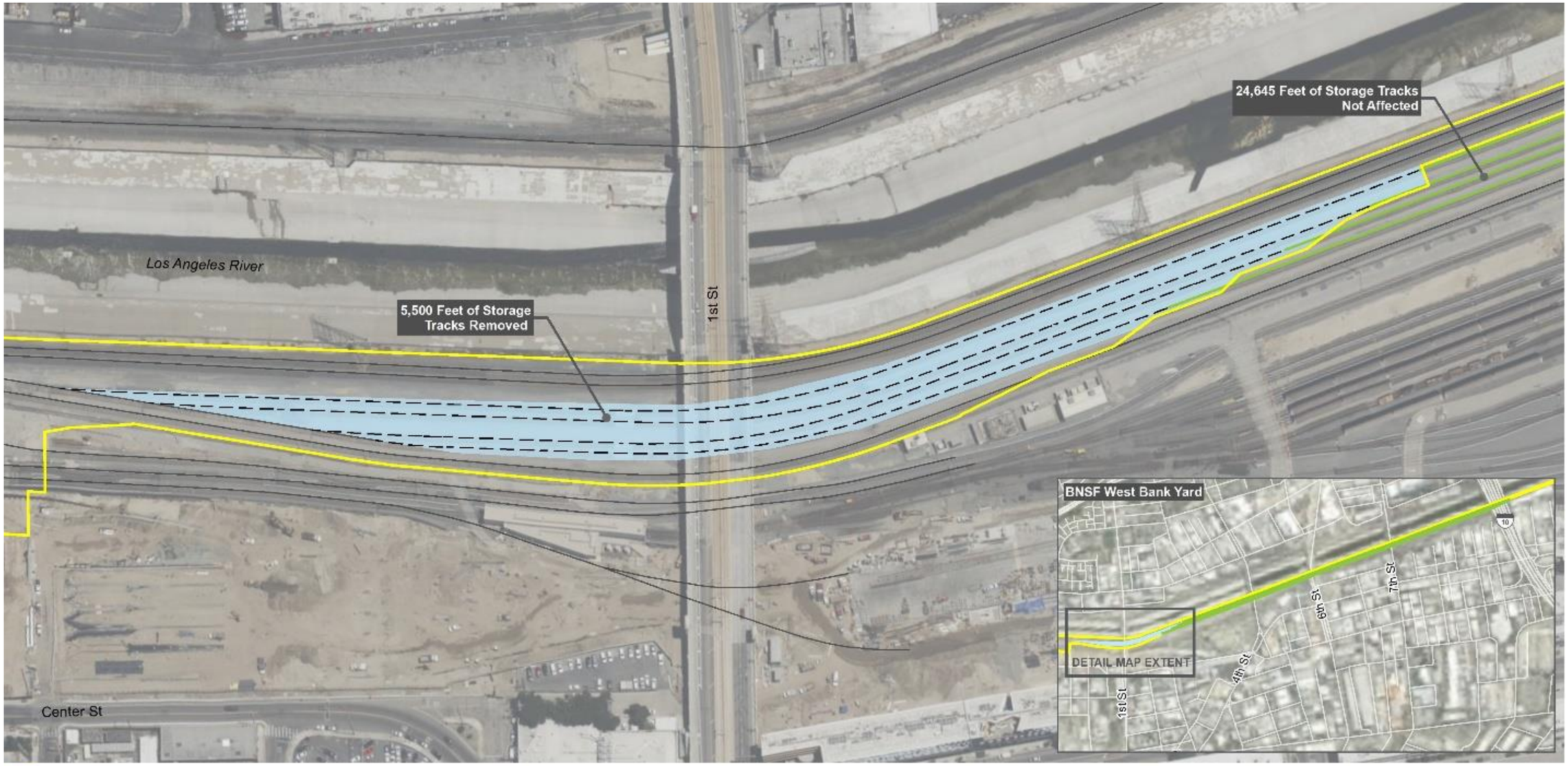
Figure 1-1. BNSF West Bank Yard Loss of Storage Tracks



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1.1 Alternatives Evaluation Process

Due to the loss of storage capacity at the BNSF West Bank Yard (and subsequent impacts to BNSF's existing optimized operations), it was necessary for CHSRA and Metro to identify a suitable location for a replacement site to offset the loss of empty intermodal railcar storage capacity and maintain BNSF's existing operational efficiencies.

The freight rail storage track replacement sites were identified by BNSF for consideration as part of Project planning/development. Below is a summary describing the alternatives evaluation process to identify the most optimal replacement site to offset the loss of storage track capacity that would occur at the BNSF West Bank Yard.

1.1.1 Freight Rail Storage Tracks Replacement Sites Considered

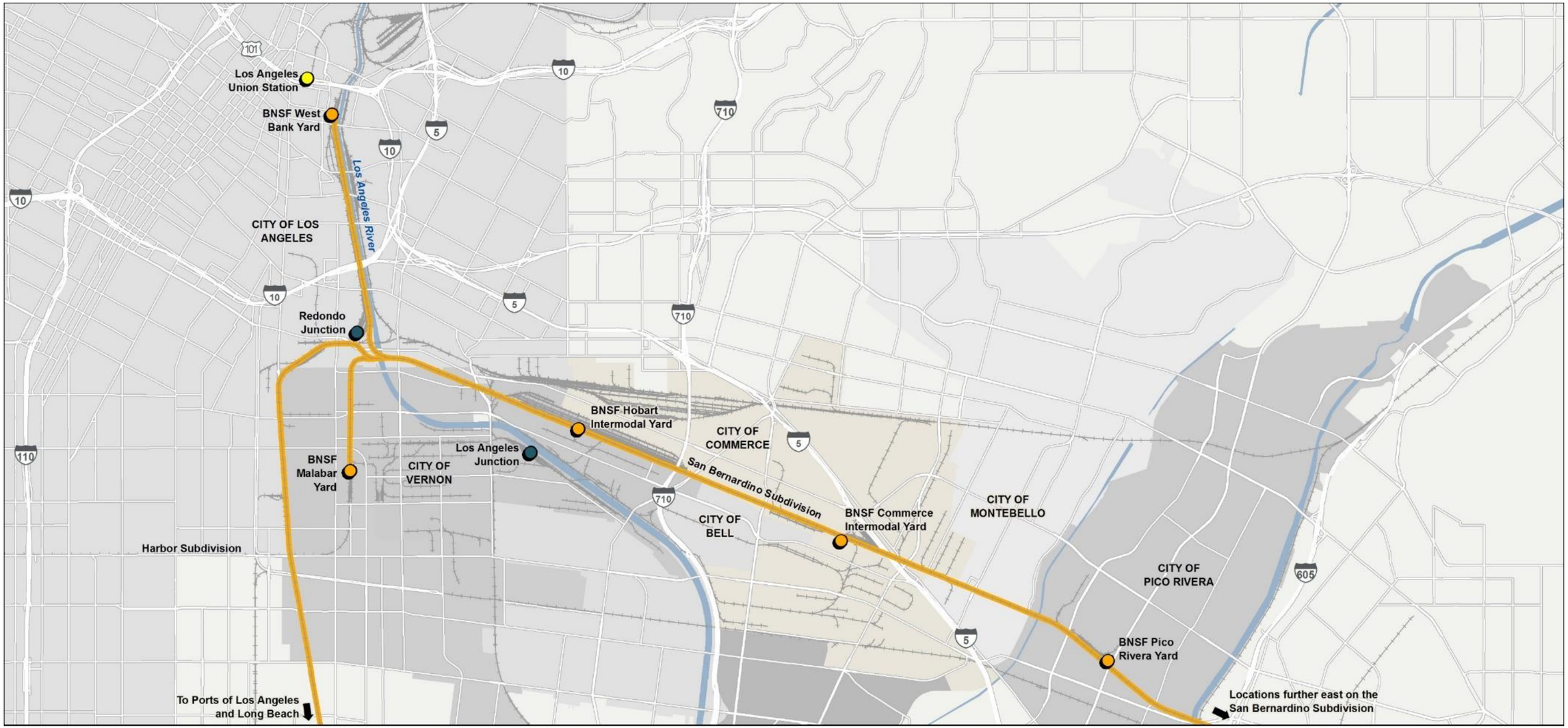
Multiple locations were considered to offset the permanent loss of freight rail storage track capacity at BNSF West Bank Yard. Five BNSF facilities (Figure 1-2) were considered as potential replacement sites based on their vicinity to BNSF Hobart/Commerce Intermodal Yards, in addition to other sites further east, as described below:

- **BNSF Hobart Yard:** BNSF Hobart Yard is located in the City of Commerce and is BNSF's largest intermodal rail yard in the country (by volume of freight goods processed). BNSF Hobart Yard is located along the BNSF San Bernardino Subdivision main line tracks and bordered by Washington Boulevard and Sheila Street to the north, Atlantic Boulevard to the east, 26th Street to the south, and Downey Road to the west. BNSF Hobart Yard is predominately surrounded by commercial and manufacturing land uses.
- **BNSF Commerce Yard:** BNSF Commerce Yard, along with the adjacent BNSF Hobart Yard, serve as the busiest intermodal hub on the BNSF network. BNSF Commerce Yard is also located in the City of Commerce, directly east of BNSF Hobart Yard. BNSF Commerce Yard is bordered by the BNSF San Bernardino Subdivision main line tracks and Sheila Street to the north, Garfield Avenue to the east, Bandini Boulevard to the south, and Eastern Avenue to the west. BNSF Commerce Yard is predominately surrounded by commercial and manufacturing land uses. The Commerce Metrolink Station, located adjacent to the rail yard (to the east), includes a passenger service platform and parking lot on the south side of the main line tracks.
- **BNSF Malabar Yard:** BNSF Malabar Yard is located in the City of Vernon, west of BNSF Hobart/Commerce Intermodal Yards, between Pacific Boulevard to the north and Fruitland Avenue to the south. BNSF Malabar Yard is surrounded by industrial land uses to the west and east and is currently used to store local merchant trains and serve local customers on existing spur lines in the western portion of the City of Vernon.
- **Los Angeles Junction:** The Los Angeles Junction rail yard is located in the City of Vernon, west of BNSF Hobart/Commerce Intermodal Yards. Los Angeles Junction is on the west bank of the Los Angeles River, between Downey Road and District Boulevard, and is surrounded by industrial land uses. Los Angeles Junction is currently used to store

local merchant trains and serve local customers on existing spur lines in the eastern and central portions of the City of Vernon.

- **BNSF Pico Rivera Yard:** BNSF Pico Rivera Yard is located in the City of Pico Rivera, approximately 5 miles east of BNSF Hobart/Commerce Intermodal Yards, between the Rio Hondo River and the Rosemead Boulevard grade separation and is surrounded by industrial and low-density residential land uses. BNSF Pico Rivera Yard is currently used to store local merchandise rail cars and other mixed freight rail cars for local customers on existing spur lines in the southern portions of the City of Pico Rivera and the eastern portion of Los Angeles County.
- **Locations further east on BNSF San Bernardino Subdivision Main Line Tracks:** BNSF facilities and corridors further east of Pico Rivera Yard, including La Mirada Yard and siding tracks on existing freight corridors, were also considered as freight rail storage track replacement sites.

Figure 1-2. Freight Rail Storage Track Replacement Sites Considered



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Screening and Evaluation Process

A two-step evaluation process—initial and secondary screening—was used to evaluate the potential replacement sites considered to offset the permanent loss of freight rail storage track capacity at BNSF West Bank Yard. The purpose of a two-step process is to eliminate any sites with major challenges (fatal flaws) from further consideration, thus focusing the detailed evaluation portion of this memorandum on the freight rail storage track replacement sites with the highest probability of maintaining current levels of freight rail operations by offsetting the loss of freight rail storage tracks. Any replacement site that did not meet both the initial and secondary criteria was rejected from further consideration.

Initial Screening

The initial screening criterion that all freight rail storage track replacement sites must meet is as follows:

1. **The freight rail storage track replacement site shall be located in proximity to, and west of, BNSF Hobart/Commerce Intermodal Yards.**

Like the existing BNSF West Bank Yard, the freight rail storage track replacement site must be located in close proximity to, and west of, BNSF Hobart/Commerce Intermodal Yards to facilitate storage of excess empty bare tables as trains pass Redondo Junction along the route between BNSF Hobart/Commerce Intermodal Yards and nearby ports. The replacement site must be located west of BNSF Hobart/Commerce Intermodal Yards to avoid trains having to travel east first, then back west toward the ultimate destination. If trains are stored east of BNSF Hobart/Commerce Intermodal Yards, in the opposite direction of the current travel path, delays in both passenger and freight rail operations would occur because trains moving to and from the BNSF facilities would require use of main line tracks along the BNSF San Bernardino Subdivision. The BNSF San Bernardino Subdivision main line tracks are within a highly congested rail corridor (already operating at maximum operational capacity) that currently supports both freight rail traffic and passenger rail traffic, which includes Metrolink regional rail trains and Amtrak intercity rail trains.

Additional rail traffic on the main line would also exacerbate existing congestion near at-grade crossings along the rail corridor, which could lead to traffic impacts on adjacent intersections and impede the movement of pedestrian, bicycle, truck, and vehicular traffic. In addition to placing additional capacity constraints on the already constrained main line and further complicating coordination requirements with passenger rail service providers to maintain safe railroad operations, using a replacement site east of BNSF Hobart/Commerce Intermodal Yards would result in additional operations and maintenance costs due to the increase in freight movements along the main line. A freight rail storage track replacement site that is located too far away from, or east of, the BNSF Hobart/Commerce Intermodal Yards would impact access to the BNSF Hobart/Commerce Intermodal Yards and interfere with BNSF's ability to maintain timely railcar movements in and out of the BNSF Hobart/Commerce Intermodal Yards. As such, it is critical for

the freight rail storage track replacement site to be located in proximity to, and west of, BNSF Hobart/Commerce Intermodal Yards.

As identified in Table 1-1, BNSF Hobart Yard, BNSF Commerce Yard, BNSF Malabar Yard, and Los Angeles Junction meet the initial screening criterion. BNSF Pico Rivera Yard and locations further east on the San Bernardino Subdivision main line tracks were rejected for further consideration because they are located east of BNSF Hobart/Commerce Intermodal Yards and would therefore require use of the San Bernardino Subdivision main line tracks.

Table 1-1. Freight Rail Storage Track Replacement Sites Initial Screening Criterion Analysis

Replacement Site	Meets Initial Screening Criterion?
BNSF Hobart Yard	**Yes.** BNSF Hobart Yard meets this criterion.
BNSF Commerce Yard	**Yes.** BNSF Commerce Yard meets this criterion.
BNSF Malabar Yard	**Yes.** BNSF Malabar Yard is located approximately 2 miles west of BNSF Hobart/Commerce Intermodal Yards. BNSF Malabar Yard meets this criterion.
Los Angeles Junction	**Yes.** Los Angeles Junction is located in close proximity to, and west of, BNSF Hobart/Commerce Intermodal Yards. Los Angeles Junction meets this criterion.
BNSF Pico Rivera Yard	**No.** BNSF Pico Rivera Yard is located east of BNSF Hobart/Commerce Intermodal Yards. This freight rail storage track replacement site was rejected from further consideration.
Locations further east on the San Bernardino Subdivision	**No.** Yard locations further east on the San Bernardino Subdivision were rejected from further consideration.

Secondary Screening

A secondary screening evaluation was performed on the four remaining freight rail storage track replacement sites to determine which location is most suitable to offset the loss of freight rail storage track capacity at BNSF West Bank Yard. The secondary screening criterion that all freight rail storage track replacement sites must meet is as follows:

2. **The freight rail storage track replacement site shall replace lost storage capacity in kind (5,500 track feet) or preserve the current levels of freight rail operations.**

In the existing condition, only one train movement is necessary to transport empty bare tables from the longest production track at BNSF Hobart/Commerce Intermodal Yards to/from the existing storage tracks at BNSF West Bank Yard. The existing BNSF West Bank Yard can accommodate up to an 8,000-foot-long trainset in any of the four storage tracks. The loss of storage track capacity at BNSF West Bank Yard would eliminate this ability to make a singular, uninterrupted train movement between the two locations. Therefore, to maintain BNSF's ability to

efficiently move a complete intermodal trainset coming from BNSF Hobart Yard, the freight rail storage track replacement site must be configured in a manner that:

- Provides full replacement of 5,500 track feet of lost storage track capacity.
- Supports physical railroad improvements and/or operational modifications capable of maintaining BNSF's operations and preserving the current levels of freight rail operations and regional goods movement.

The application of the detailed evaluation screening criterion and how each freight rail storage track replacement site was evaluated is described below.

BNSF Hobart Yard

BNSF Hobart Yard does not meet the detailed evaluation screening criterion.

BNSF Hobart Yard does not have enough available land area to accommodate additional storage track capacity for empty bare tables in its current configuration because all space available at BNSF Hobart Yard is occupied by site-specific facilities associated with intermodal operations (i.e., intermodal tracks, buildings, operation centers, maintenance buildings and storage/mechanical workshops, drive aisles, truck parking, truck maintenance docks, chassis/crane parking, and chassis/crane maintenance areas). The existing footprint of BNSF Hobart Yard is at full capacity.

Any physical improvements and/or modifications to existing operations at BNSF Hobart Yard are not feasible because reconfiguration of intermodal facilities on-site would be required to add storage capacity in conjunction with other intermodal operations. Any change to the existing intermodal facilities at BNSF Hobart Yard (production tracks, storage tracks, lead tracks, main line tracks, receiving tracks, departure tracks, tie-up tracks, and/or maintenance tracks) would impact the shared passenger/freight rail network in the region and BNSF's ability to maintain current levels of freight rail operations and regional goods movement.

The addition of new storage tracks was considered at BNSF Hobart Yard; however, the additional tracks would require full parcel acquisition of several dozen commercial properties south of Washington Boulevard, the closure of 26th Street, and potentially new intermodal facilities to offset the loss of storage track capacity in kind. Due to the several dozen parcel acquisitions that would be required and the potential requirement for new intermodal facilities to offset any modifications to BNSF Hobart Yard facilities, utilizing BNSF Hobart Yard as a storage facility in conjunction with current intermodal operations would be impractical.

BNSF Commerce Yard

BNSF Commerce Yard does not meet the detailed evaluation screening criterion.

BNSF Commerce Yard does not have enough available land area to accommodate additional storage track capacity for empty bare tables in its current configuration because all space available at BNSF Commerce Yard is occupied by site-specific facilities associated with

intermodal operations (i.e., intermodal tracks, drive aisles, facility buildings, truck parking, crane and chassis parking, and maintenance or other support facilities). Like BNSF Hobart Yard, the existing footprint of BNSF Commerce Yard is at full capacity.

Similar to BNSF Hobart Yard, any physical improvements and/or modifications to existing operations at BNSF Commerce Yard are not feasible because reconfiguration of intermodal facilities on-site would be required to add storage capacity in conjunction with other intermodal operations. Any change to the existing intermodal facilities at BNSF Commerce Yard would impact the shared passenger/freight rail network in the region and BNSF's ability to maintain current levels of freight rail operations and regional goods movement.

The addition of a storage track was considered at BNSF Commerce Yard, but the additional track would require full parcel acquisition of approximately 12 properties between BNSF Commerce Yard and Bandini Boulevard (or a portion thereof) and relocation of multiple large commercial businesses. Additionally, there are operational restrictions at BNSF Commerce Yard associated with the current passenger train movements that occur at the Commerce Metrolink Station platform, which impede BNSF's ability to enter and/or store a long train into the facility. Due to the substantial property acquisitions, business relocations, and operational restrictions from passenger train movements near BNSF Commerce Yard, use of BNSF Commerce Yard as a storage facility in conjunction with current intermodal operations would be impractical.

BNSF Malabar Yard

BNSF Malabar Yard meets the secondary screening criterion.

In the existing condition, BNSF Malabar Yard contains seven rail yard tracks where merchant trains are currently staged and stored to service local customers. BNSF Malabar Yard is bisected by 49th Street, which is a through street open to vehicular traffic. The California Public Utilities Commission (CPUC) regulations restrict storage of trains within 150 feet of the 49th Street at-grade crossing. In coordination with Metro, BNSF determined that two railroad improvements in the City of Vernon could be implemented at the existing BNSF Malabar Yard to offset the loss of freight rail track storage capacity at BNSF West Bank Yard:

1. **49th Street Closure:** Closing the existing at-grade railroad crossing at 49th Street provides up to 3,350 feet of freight rail track storage capacity for BNSF to store empty bare tables at BNSF Malabar Yard. This additional freight rail track storage can occur because the CPUC at-grade crossing restriction discussed above would no longer be applicable if 49th Street was closed.

   The 3,350 feet of freight rail track storage capacity added from the 49th Street Closure, combined with the remaining capacity of BNSF West Bank Yard that would not be affected by the Link US Project (24,645 feet south of First Street), BNSF's ability to stage and store empty bare tables from BNSF Hobart/Commerce Intermodal Yards and nearby ports would be maintained.

2. **46th Street Connector:** Constructing a new 1,000-foot track connection along 46th Street enables BNSF to relocate all local general merchandise trains currently stored at BNSF Malabar Yard to Los Angeles Junction, thereby providing space at BNSF Malabar Yard to store empty bare tables. The 46th Street Connector also allows freight trains to bypass the heavily congested San Bernardino Subdivision main line tracks because they would be travelling between BNSF Malabar Yard and Los Angeles Junction on a new track connection dedicated for local merchant trains. The 46th Street Connector would be located between Pacific Avenue and the intersection of the existing BNSF tracks and at-grade railroad crossing 46th Street, just east of Seville Avenue.

   Without the 46th Street Connector, local merchandise traffic would have to move between BNSF Malabar Yard and BNSF Hobart/Commerce Intermodal Yards via the San Bernardino Subdivision, which would further degrade the already-congested San Bernardino Subdivision main line tracks. The construction of a new direct track connection between BNSF Malabar Yard and Los Angeles Junction would maintain current levels of freight rail operations by offsetting the loss of storage track capacity and eliminating the need for local merchant trains to travel up and across the heavily congested San Bernardino Subdivision main line tracks to access BNSF Hobart Yard, thereby reducing traffic on the shared passenger/freight rail network in the region.

The combination of the 49th Street closure and 46th Street connector allows BNSF to store intermodal trainsets at BNSF Malabar Yard, offset the loss of capacity at the BNSF West Bank Yard, and preserve the current levels of freight rail operations and regional goods movement; therefore, this freight storage track replacement site meets the secondary criteria.

Los Angeles Junction

Los Angeles Junction does not meet the secondary screening criterion.

Los Angeles Junction does not have enough available land area to accommodate additional storage track capacity for empty bare tables in its current configuration because all space available at Los Angeles Junction is occupied by existing merchant trains that currently operate from this location to serve local customers.

Any physical improvements and/or modifications to existing operations at Los Angeles Junction are not feasible because reconfiguration of local merchandise facilities on site would be required to add storage capacity in conjunction with other local operations. The Los Angeles River functions as a physical barrier to the east, and there are also multiple private properties with active businesses adjacent to the facility. Due to insufficient available land area use of Los Angeles Junction as a storage facility in conjunction with current merchandise operations for local customers would be impractical.

Summary of Detailed Evaluation

Table 1-2 summarizes the results of the secondary screening evaluation to identify a freight rail storage track replacement site to offset the loss of storage capacity at BNSF West Bank Yard.

Table 1-2. Detailed Evaluation

Replacement Site	Meets Detailed Evaluation Screening Criterion?
BNSF Hobart Yard	**No.** BNSF Hobart Yard does not have capacity to replace lost storage capacity in kind or preserve the current levels of freight rail operations.
BNSF Commerce Yard	**No.** BNSF Commerce Yard does not have capacity to replace lost storage capacity in kind or preserve the current levels of freight rail operations.
BNSF Malabar Yard	**Yes.** BNSF Malabar Yard can replace the lost storage capacity in conjunction with other physical modifications on 46th Street to accommodate local merchandise trains. The railroad improvements to BNSF Malabar Yard allow BNSF to preserve the current levels of freight rail operations.
Los Angeles Junction	**No.** Los Angeles Junction does not have capacity to replace lost storage capacity in kind or preserve the current levels of freight rail operations

Based on the screening and evaluation process, BNSF Malabar Yard is the only freight rail storage track replacement site that meets the criteria to offset the loss of storage track capacity at BNSF West Bank Yard. The track capacity gained by the 49th Street closure, combined with a new direct track connection between BNSF Malabar Yard and Los Angeles Junction, would allow for storage of empty bare tables from long intermodal trainsets traveling to and/or from BNSF Hobart/Commerce Intermodal Yards and nearby ports while maintaining current levels of freight rail operations and regional goods movement.

1.2 Location and Study Area

BNSF's Malabar Yard is approximately 8 acres located on the Harbor Subdivision approximately 3 miles south of LAUS in the City of Vernon, California (Figure 1-3). The railroad improvements are located in the vicinity of Malabar Yard primarily on 46th Street and 49th Street, between Santa Fe Avenue and Soto Street, in the City of Vernon, California.

The Malabar Yard study area is bound on the north by Vernon Avenue, to the east by Soto Street, to the south by Fruitland Avenue, and to the west by Santa Fe Avenue and is generally used to characterize the affected environment at, and within, the vicinity of Malabar Yard, unless otherwise specified, to support the environmental evaluation of railroad improvements in the City of Vernon (Figure 1-4). The Malabar Yard study area is primarily industrial. Existing businesses in the area include warehouses, wholesale and distribution services, and other commercial enterprises. Roadways in the vicinity of the proposed railroad improvements include Pacific Boulevard, Seville Avenue, Santa Fe Avenue, Fruitland Avenue, Soto Street, 46th Street, and 49th Street.

Figure 1-3. Location and Regional Vicinity

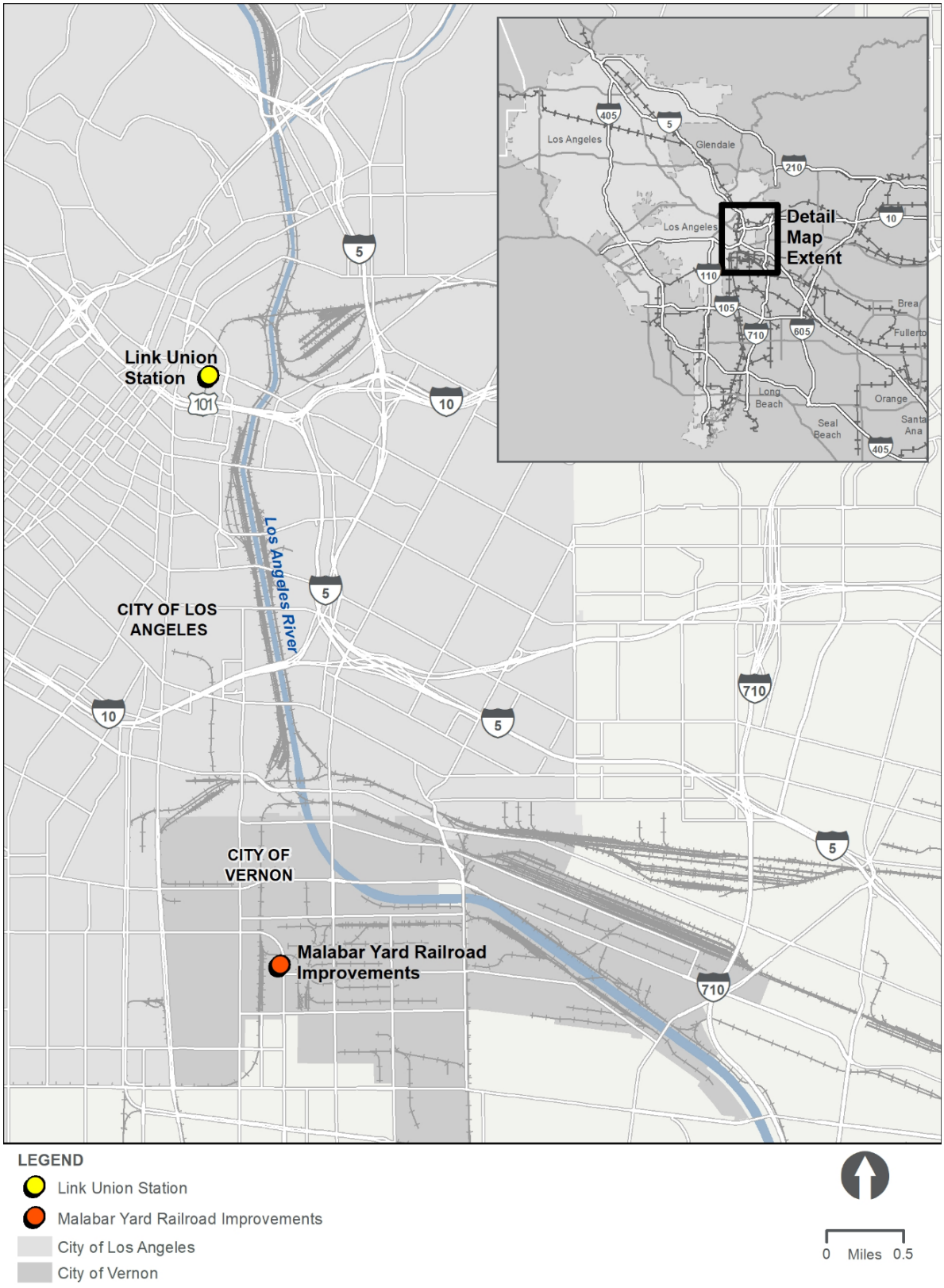

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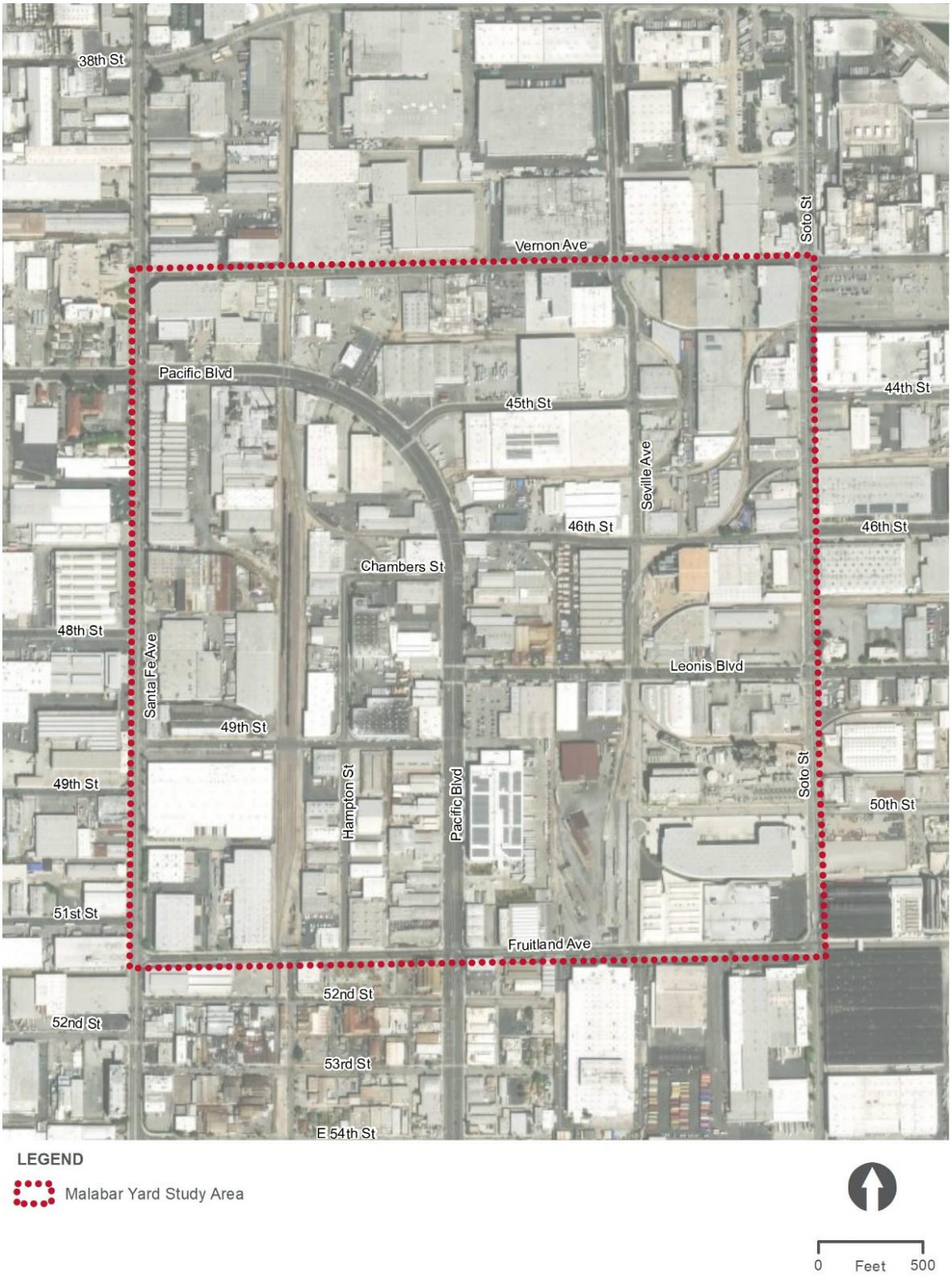
Figure 1-4. Malabar Yard Study Area



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2.0 Description of Malabar Yard Railroad Improvements

2.1 Overview of Railroad Improvements

As depicted in Figure 2-1 below, the Malabar Yard railroad improvements are located in the vicinity of BNSF's Malabar Yard on 49th Street and 46th Street.

Figure 2-1. Overview of Malabar Yard Railroad Improvements

An overview of the railroad improvements considered at each location are described below:

- ***49th Street Closure –*** Closure of the at-grade railroad crossing at 49th Street would accommodate BNSF storage capacity at the BNSF West Bank Yard by approximately 3,350 track feet. Closure of 49th Street facilitates storage of empty intermodal train car sets that are no longer able to be stored at the BNSF West Bank Yard. Two design options are being considered for a closure of the at-grade crossing at 49th Street, as described below:

- 49th Street Closure Design Option 1 – Offset Cul-de-Sac: this design option includes a typical cul-de-sac configuration with a rounded curve edge, with the offset being the portion of the roadway that encroaches into private property south of the existing roadway (see Figure 2-3 and Figure 2-5).
- 49th Street Closure Design Option 2 – Hammerhead Cul-de-Sac: this design option includes a non-typical cul-de-sac configuration in the shape of a "T," with areas on each side of the existing roadway for large trucks to maneuver in and out of adjacent private properties (see Figure 2-4 and Figure 2-6).

- ***46th Street Connector –*** An approximately 1,000-foot segment of new track between two existing track segments would provide a dedicated connection for freight trains serving local customers to travel between BNSF's Malabar Yard and BNSF's Los Angeles Junction. Two design options are being considered for a new track connection along 46th Street as described below:
  - 46th Street Connector Design Option 1 – Southern Alignment: this design option includes an alignment that encroaches into multiple private properties on the south side of 46th Street to avoid narrowing and/or reconfiguration of the existing roadway between Pacific Boulevard and Seville Avenue (see Figure 2-3 and Figure 2-7).
  - 46th Street Connector Design Option 2 – Northern Alignment: this design option includes an alignment that avoids the majority of private properties on the south side of 46th Street and includes narrowing and/or reconfiguration of the existing roadway between Pacific Boulevard and Seville Avenue (see Figure 2-4 and Figure 2-8).

Design plans for Design Option 1 (for both 49th Street and 46th Street) were prepared by BNSF in June 2020 (BNSF 2020). Design plans for Design Option 2 (for both 49th Street and 46th Street) were prepared by BNSF in February 2021 after receiving substantial feedback from stakeholders and business owners within the vicinity of the Malabar Yard railroad improvements (BNSF 2021).

Malabar yard railroad improvements would not be implemented using a mix-and-match approach. If Design Option 1 is selected, that would mean Design Option 1 for 49th Street Closure and Design Option 1 46th Street would be constructed. If Design Option 2 is selected, that would mean Design Option 2 for 49th Street Closure and Design Option 2 46th Street would be constructed.

2.2 Modifications to Freight Railroad Operations

In March 2021, BNSF provided the information below regarding the existing and future train operations in the vicinity of Malabar Yard to describe how operations would be modified upon implementation of the Malabar Yard railroad improvements. The existing and future freight railroad operational characteristics in the vicinity of BNSF Malabar Yard is summarized below and depicted in Figure 2-2.

2.2.1 Existing Operations

In the existing condition, Malabar Yard contains seven rail yard tracks running north and south where merchant trains are currently staged and stored to service local customers. The CPUC regulations restrict storage of trains within 150 feet of the 49th Street at-grade crossing.

The train consist information for local merchandise cars traveling between Hobart Yard and Malabar Yard currently destined for local customers is presented below to provide a basis for comparison to the future operational characteristics with implementation of the 46th Street Connector:

- Locomotive Type: Tier 2
- Typical Speed of Trains: 10-20 miles per hour
- Typical Length of Trains: Up to 1,250 feet (up to 15 Rail Cars)
- Typical Number of Engines: One locomotive

The entrances at the north, east, and south of Malabar Yard facilitate existing operations for BNSF trains, as described below.

- ***North Entrance*** (Malabar Yard to Hobart Yard Connection – brown line on Figure 2-2) – There are 2 round trips per weekday into/out of Malabar Yard using the northern entrance across Pacific Boulevard on the Harbor Subdivision (4 train movements total).
- ***East Entrance*** (Malabar Yard to Spur Line Track East of Pacific Boulevard –purple line on Figure 2-2) – There is one round trip per weekday into/out of Malabar Yard using the east entrance across Pacific Boulevard to serve local customers on the existing commercial spur line that leads south toward Fruitland Avenue.
- ***South Entrance –*** Trains do not enter Malabar Yard from the south, but the south entrance at Fruitland Avenue is utilized to perform “head-end moves.” These moves can occupy track southwest of BNSF Malabar Yard to the 2nd Street crossing in the vicinity of Slauson Avenue.

2.2.2 Future Operations with Proposed Railroad Improvements

The Malabar Yard railroad improvements facilitate operational modifications for BNSF freight trains because empty intermodal train car sets would be stored in two locations (Malabar Yard and the remaining portion of West Bank Yard), instead of one single location.

The majority of the West Bank Yard south of First Street would not be affected as part of the Link US Project and would continue to be available for storage of empty intermodal train car sets. In the future upon operation of the Malabar Yard railroad improvements, train cars would move from Hobart Yard to the remaining portion of the West Bank Yard and to Malabar Yard – this could occur anytime of the day. If the 49th Street Closure were not implemented, BNSF would only have the storage tracks available at the southern portion of West Bank Yard until the entirety of the

West Bank Yard is removed (anticipated as early as 2031 upon implementation of the Los Angeles to Anaheim Project Segment of the planned high-speed rail [HSR] system). Without the 49th Street Closure, storage at Malabar Yard would be restricted due to CPUC regulations.

The Malabar Yard railroad improvements would increase operational efficiency for BNSF because merchant train traffic would be redistributed from the north entrance of Malabar Yard to the east entrance (using the new 46th Street Connector) to and from Los Angeles Junction, thereby eliminating the need to operate on the same tracks as passenger trains on the heavily congested San Bernardino Subdivision (Figure 2-2). The 49th Street Closure eliminates the need to store displaced rail cars in transit along congested freight tracks. Benefits from operation of Malabar Yard railroad improvements include reduced intermodal railcar miles of travel resulting in reduced fuel consumption by rail and associated rail emissions. In addition, the Malabar Yard railroad improvements would improve mainline rail network capacity to support regional freight rail growth, thereby avoiding the diversion of rail served demand to long-haul trucking. The reduction in truck VMT results in reduced fuel consumption by truck and associated truck emissions.

If the 46th Street Connector were not implemented, BNSF would continue to serve customers on the existing spur line track east of Pacific Boulevard and south of 46th Street and the existing spur line that leads south toward Fruitland Avenue.

The operational modifications at Malabar Yard associated with the railroad improvements are further described below.

- ***North Entrance*** (Malabar Yard to Hobart Yard [brown line on Figure 2-2]) – The number of trains entering and existing the north entrance would be reduced with the 46th Street Connector. Existing operations at the northern entrance include 2 round trips per weekday into/out of Malabar Yard (4 train movements total). Upon implementation of the 46th Street Connector, it is estimated that less than 1 round trip per weekday (approximately 3 round trips per 5-day work week or 6 total train movements per 5-day work week) would occur to move empty intermodal train car sets into/out of Malabar Yard using the northern entrance across Pacific Boulevard on the Harbor Subdivision.

  As discussed in more detail below, a range of future operations was considered. The foreseeable length of future trains operating on the 46th Street Connector could range from 2,000 feet to 4,000 feet. To serve customers on the existing spur line track east of Pacific Boulevard and south of 46th Street, the Pacific Boulevard and Vernon Avenue at-grade crossings could be occupied for “head-end moves” as necessary to facilitate continued freight operations on the existing spur line (green line on Figure 2-2).

- ***East Entrance*** – The east entrance to Malabar Yard will be used for BNSF trains (local merchant train sets) that would travel in two directions as described below.

  - Malabar Yard to Los Angeles Junction Connection (green line on Figure 2-2) – For the future condition, it is estimated that one round trip per weekday would occur into/out of Malabar Yard using the new 46th Street Connector (2 train movements total per day or 10 train movements total per 5-day work week).

- Malabar Yard to Spur Line Track East of Pacific Boulevard (purple line on Figure 2-2) – Similar to the current existing conditions, the future condition would accommodate one round trip per weekday (2 train movements total per day or 10 train movements total per 5-day work week) into/out of Malabar Yard using the east entrance across Pacific Boulevard to serve local customers on the existing commercial spur line that leads south toward Fruitland Avenue.

  If commercial demand increases during future operations, BNSF will add train cars to train sets traveling out of the east entrance; therefore, train volumes would remain constant through 2040, and no increase in train movements would occur through 2040.

- ***South Entrance*** – No modifications to BNSF's current operating plan would occur for trains at the south entrance because this location would continue to be occupied for "head-end moves" as necessary to facilitate continued freight operations at Malabar Yard.

Table 2-1 and Table 2-2 present the peak hour train movements, total daily train movements, and total weekday train movements based on the existing and estimated future operational characteristics described above for the north and east entrances. For the purposes of this environmental evaluation, train movements were estimated by using the 5-day work week to be most conservative as most vehicular and freight traffic interacting together would occur during the weekdays. This approach is considered the most conservative scenario.

Table 2-1. North Entrance – Existing and Estimated Future Train Movements (Between Malabar Yard and Hobart Yard)[a]

Frequency	2020	2024	2031	2040
Peak hour train movements	2	.5	.5	.5
Total daily train movements	4	.5	.5	.5
Total weekday train movements	20	3	3	3

Notes:
[a] ***See Brown Line on Figure 2-2.***

Table 2-2. East Entrance – Existing and Estimated Future Train Movements

Route	Malabar Yard – Spur Line[a]				Malabar Yard – Los Angeles Junction (46th Street Connector)[b]			
Frequency	2020	2024	2031	2040	2020	2024	2031	2040
Peak Hour Train Movements	1	1	1	1	—	1	1	1

Table 2-2. East Entrance – Existing and Estimated Future Train Movements

Route	Malabar Yard – Spur Line[a]				Malabar Yard – Los Angeles Junction (46th Street Connector)[b]			
Frequency	**2020**	**2024**	**2031**	**2040**	**2020**	**2024**	**2031**	**2040**
Total Daily Train Movements	2	2	2	2	—	2	2	2
Total Weekday Train Movements	10	10	10	10	—	10	10	10

Notes:
[a] ***See Purple Line on Figure 2-2.***
[b] ***See Green Line on Figure 2-2.***

Figure 2-2. Operational Characteristics of Freight Railroad Operations in Vicinity of BNSF Malabar Yard

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2.2.3 Future Operational Characteristics – 46th Street Connector

Along the 46th Street Connector, BNSF provided the following information related to future freight train movements to support the environmental evaluation of the Malabar Yard railroad improvements. As discussed in more detail below, a range of future operations was considered to address a typical operational scenario and a conservative operational scenario (worst case) for the purposes of preparing the traffic queuing and air quality analysis (Section 3.3, Transportation and Section 3.5, Air Quality and Global Climate Change respectively):

The train consist information presented below was used to describe the range of future operational characteristics considered in the environmental evaluation:

- Locomotive Type: Tier 2
- Typical Speed of Trains: 10-20 miles per hour
- Typical Length of Trains: 2,000 feet – 4,000 feet
- Typical Number of Engines: Two locomotives
- Typical Number of Rail Cars Traveling on the 46th Street Connector:
  - 30 Rail Cars – 2,000 feet in length; or
  - 60 Rail Cars – 4,000 feet in length.

2.3 Description of Malabar Yard Railroad Improvements

Figure 2-3 depicts the major components associated with railroad improvements at 49th Street and 46th Street for Design Option 1, respectively; and Figure 2-4 depicts the major components associated with the railroad improvements at both locations for Design Option 2. All railroad improvements are described in detail further below.

2.3.1 49th Street Closure Design Option 1 – Offset Cul-de-Sac

The major components associated with the 49th Street Closure Design Option 1 include: a new offset cul-de-sac west of the tracks, replacement of a portion of each track at the existing at-grade crossing and closure of 49th Street at Hampton Street, installation of removable bollards east of the tracks, and new signage. Figure 2-3 depicts the location of the 49th Street closure, the offset cul-de-sac, and the associated project footprint where temporary and permanent impacts would occur as part of Design Option 1. Additional detail is provided below for the track, signal, safety, and civil improvements.

Track improvements:

- Removal of existing railroad crossing signal, west of Malabar Yard
- Installation and restoration of property fence lines where applicable

- Removal of existing asphalt where the at-grade crossing on 49th Street currently exists, and replacement of seven 120-foot portions of existing track (840 linear feet of existing track)

Signal, safety, and civil improvements:

- New roadway signage at the east side of Santa Fe Avenue and 49th Street intersection
- Replacement of existing sidewalk and asphalt as part of cul-de-sac improvements along 49th Street
- Restriping of 49th Street
- Installation of new removable bollards east of the tracks
- Installation of new roadway signage at west side of Hampton Street and 49th Street intersection.

2.3.2 49th Street Closure Design Option 2 – Hammerhead Cul-de-Sac

The major difference between Design Option 1 and Design Option 2 for the 49th Street Closure is the configuration of the roadway west of the railroad tracks at Malabar Yard. East of Santa Fe Street, Design Option 2 would facilitate future turning movements on 49th Street by allowing for maneuvering of vehicles and large trucks in a hammerhead configuration. This design option would affect fewer driveways and require less overall private property to facilitate a turn around on 49th Street. Figure 2-3 depicts the location of the 49th Street closure, the hammerhead cul-de-sac, and the associated footprint where temporary and permanent impacts would occur as part of Design Option 2.

Figure 2-3. BNSF Malabar Yard Railroad Improvements (49th Street Closure and 46th Street Connector Design Option 1)

LEGEND

- Proposed New Track
- Realigned Spur Track
- Track Replacement (no new tracks)
- Proposed Cul-de-Sac
- Proposed Traffic/Railroad Gate
- Existing Track
- Flasher
- Proposed Curb and Median

49TH STREET CLOSURE - DESIGN OPTION 1

1. New Offset Cul-de-Sac
2. Track Replacement
3. Full Street Closure at Hampton St., Proposed Removable Bollards, Removal of On Street Parking

46TH STREET CONNECTOR - DESIGN OPTION 1

4. Existing At-Grade Crossing Enhancement - Pacific Blvd.
   - New Traffic/RR Signals, Flashers and Gates
   - New Medians/Curbline and Roadway Reconfiguration
   - Removal of On Street Parking at Intersection
5. 46th St Connector Track
6. Realigned Spur Track
7. New At-Grade Crossing, with Automatic Sliding Gates, for Business Egress
8. New At-Grade Crossing - Seville St.
   - New Traffic/RR Signals, Flashers and Gates
   - New Medians/Curbline and Roadway Reconfiguration
9. Existing At-Grade Crossing Enhancement - Seville St.
   - New RR Signals, Flashers and Gates
   - New Medians/Roadway Reconfiguration
   - New Driveway with Automatic Sliding Gates for Business Egress
10. Existing At-Grade Crossing Enhancement - 46th St.
    - New RR Signals, Flashers and Gates
    - New Medians\Roadway Reconfiguration

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Figure 2-4. BNSF Malabar Yard Railroad Improvements (49th Street Closure and 46th Street Connector Design Option 2)

LEGEND

- Proposed New Track
- Realigned Spur Track
- New Hammerhead Cul-de-Sac
- Track Replacement (no new tracks)
- Proposed Traffic/Railroad Gate
- Existing Track
- Flasher
- Proposed Curb and Median

49TH STREET CLOSURE - DESIGN OPTION 2

1. New Hammerhead Cul-de-Sac
2. Track Replacement
3. Full Street Closure at Hampton St., Proposed Removable Bollards, Removal of On Street Parking

46TH STREET CONNECTOR - DESIGN OPTION 2

4. Existing At-Grade Crossing Enhancement - Pacific Blvd.
   - New Traffic/RR Signals, Flashers and Gates
   - New Medians/Curbline and Roadway Reconfiguration
   - Removal of On Street Parking at Intersection
5. Realigned Spur Track
6. At-Grade Private Crossing for Business Egress
7. Two At-Grade Private Crossings for Business Egress
8. 46th St Connector Track
9. New At-Grade Crossing - Seville St.
   - New Traffic/RR Signals, Flashers and Gates
   - New Medians/Curbline and Roadway Reconfiguration
10. Existing At-Grade Crossing Enhancement - Seville St.
    - New RR Signals, Flashers and Gates
    - New Medians/Roadway Reconfiguration
    - New Driveway with Automatic Sliding Gates for Business Egress
11. Existing At-Grade Crossing Enhancement - 46th St.
    - New RR Signals, Flashers and Gates
    - New Medians\Roadway Reconfiguration

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Figure 2-5. Malabar Yard 49th Street Closure Design Option 1 (Offset Cul-de-Sac) – Major Components and Project Footprint

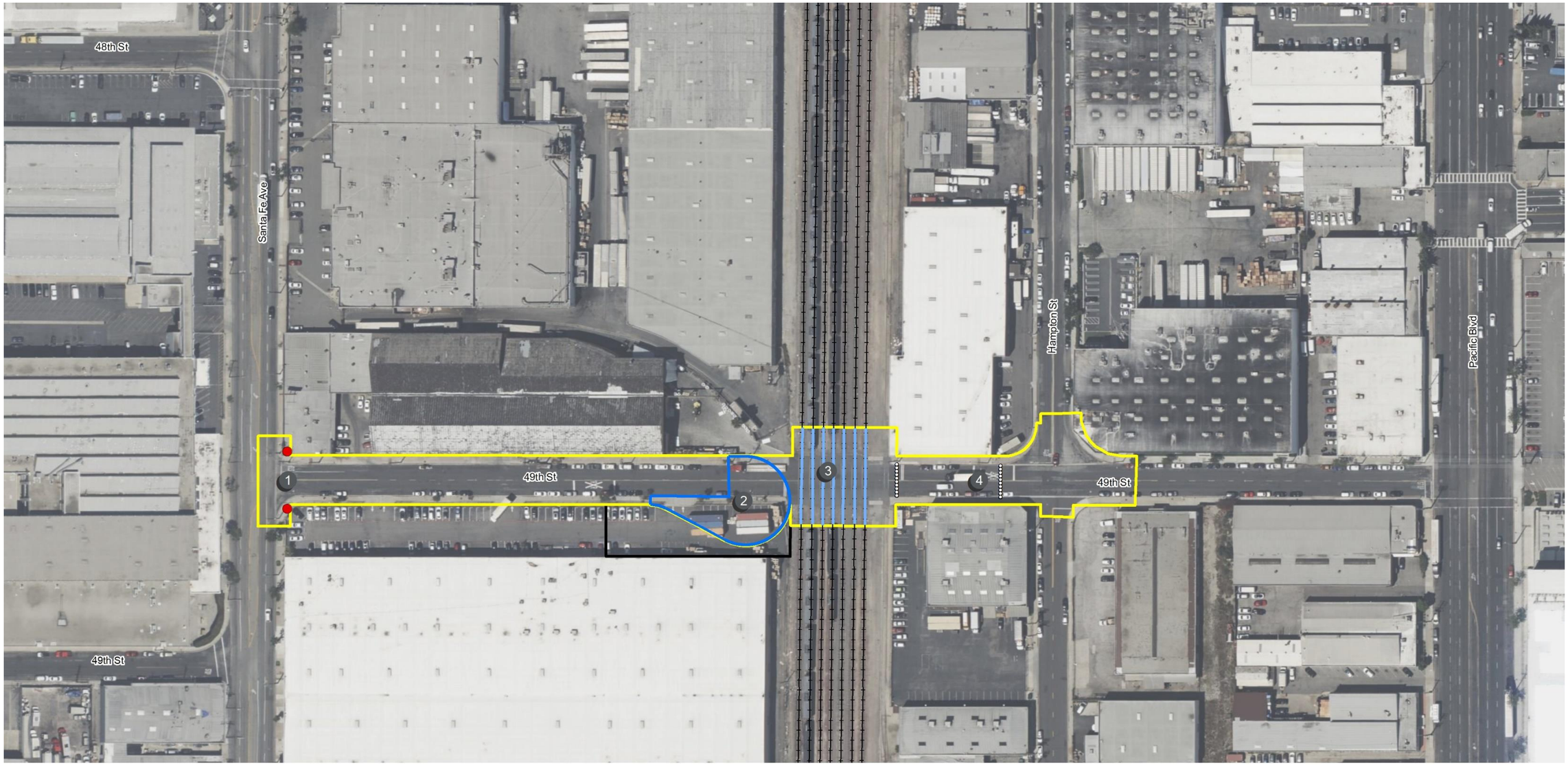

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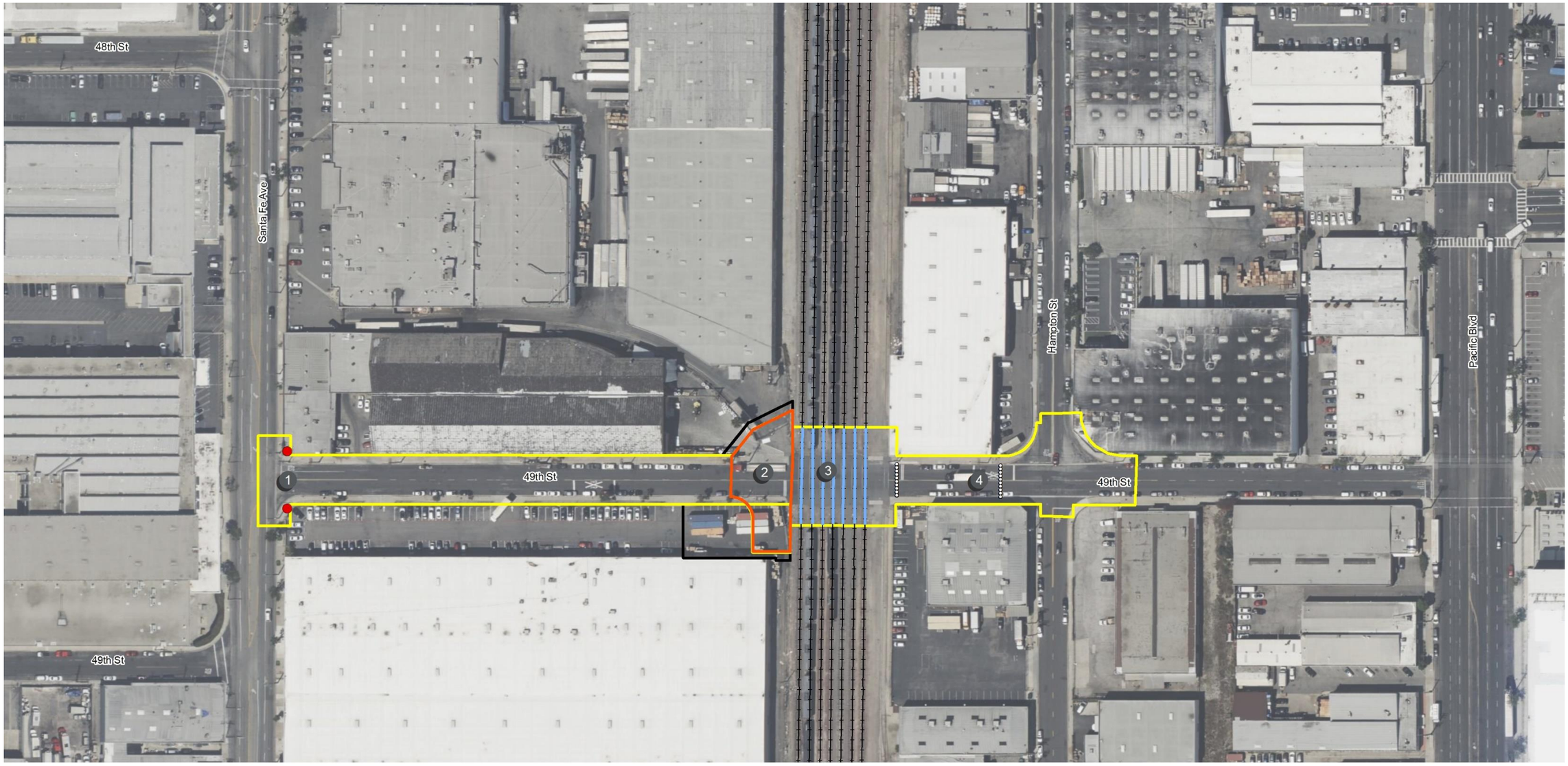
Figure 2-6. Malabar Yard 49th Street Closure Design Option 2 (Hammerhead Cul-de-Sac) – Major Components and Project Footprint



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2.3.3 46th Street Connector Design Option 1 – Southern Alignment

The major components associated with the 46th Street Connector Design Option 1 include: a new approximately 1,000-foot connector track, a realigned spur track, one new at-grade public crossing, one new at-grade private crossing, and enhancement of three existing at-grade crossings. Additional detail is depicted on Figure 2-7 and provided below for track, signal, safety, and civil improvements.

Track improvements:

- Installation of an approximately 1,000-foot track connection
- Various infrastructure improvements of existing track work between Malabar Yard turnout through Pacific Boulevard
- Realignment of existing industry spur track
- Installation and restoration of property fence lines where applicable
- Various infrastructure improvements of existing track work between proposed turnout connection at Los Angeles Junction to the existing and nearest crossover (to the north)
- Various drainage and utility impacts across limits of improvements

Signal, safety, and civil improvements:

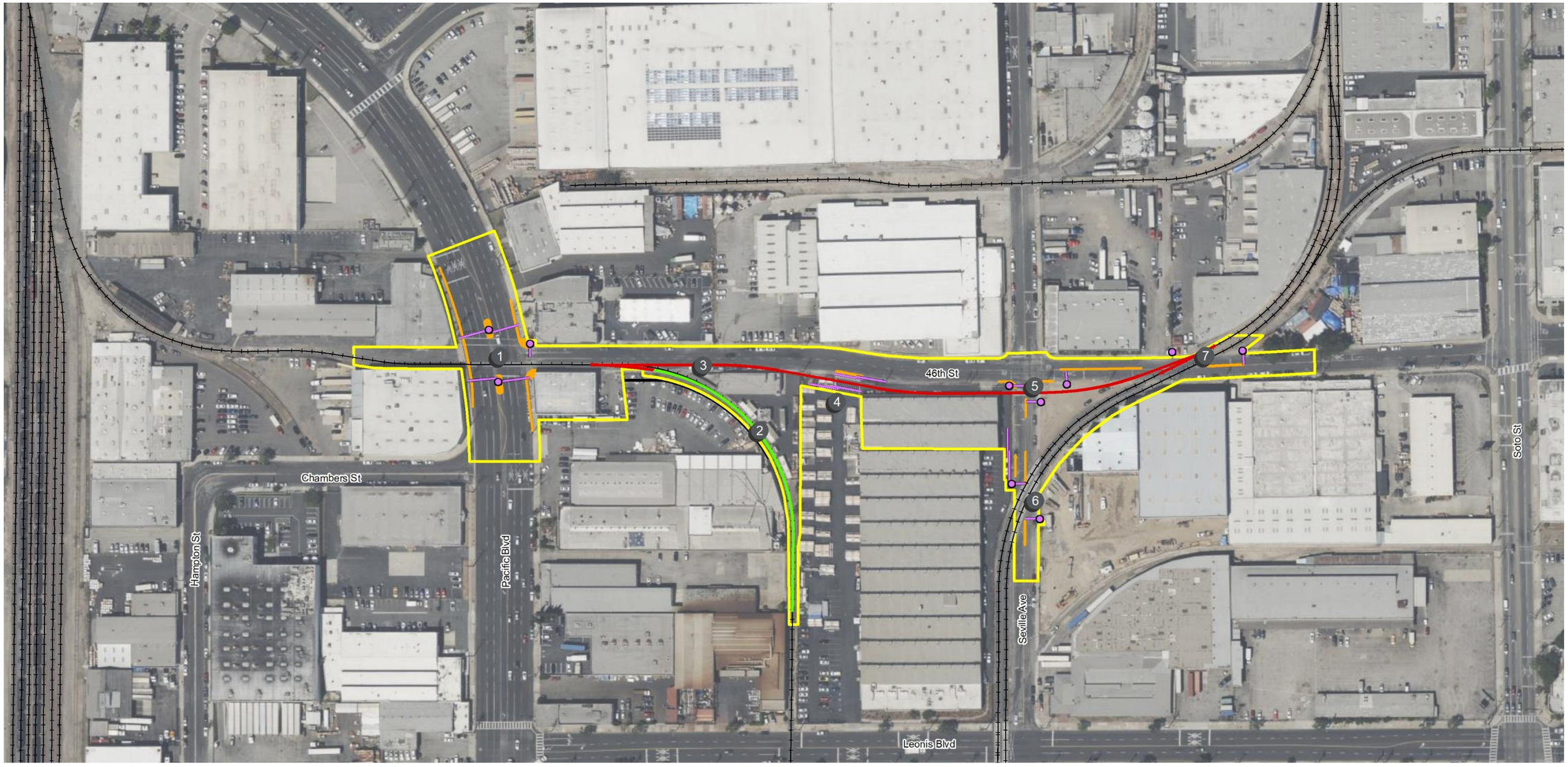
- Installation of railroad signals, flashers, and gate arms in all required directions at Pacific Boulevard and 46th Street
- Installation of railroad signals, flashers, gates arms, on two sides at existing Seville Avenue railroad crossing and 46th Street railroad crossing
- Expansion of curb line, sidewalk/ramp, and driveway improvements along west side of Pacific Boulevard
- Installation of traffic signals, in all required directions at Pacific Boulevard and 46th Street intersection
- Installation of center medians north and south sides of Pacific Boulevard and 46th Street intersection
- Striping improvements at Pacific Boulevard and 46th Street intersection
- Expansion of new curb line and sidewalk/ramp improvements along east side of Pacific Boulevard
- Asphalt replacement and roadway restriping along 46th Street, from Pacific Boulevard to eastern end of improvements
- Installation of new traffic signals in all directions at Seville Avenue and 46th Street

- Installation of center medians north and south sides of Seville Avenue railroad crossing and existing Seville Avenue crossing
- Installation of center medians east and west sides of existing 46th Street railroad crossing
- Asphalt replacement and roadway restriping along Seville Avenue, from 46th Street to southern end of improvements
- New curb line and sidewalk/ramp improvements along south side of 46th Street and at southeast/southwest corners of Seville Avenue and 46th Street intersection

2.3.4 46th Street Connector Design Option 2 – Northern Alignment

The major difference between Design Option 1 and Design Option 2 for the 46th Street connector is the configuration of the approximately 1,000-foot track alignment between Pacific Boulevard and Seville Avenue. East of the existing spur line that would be realigned, Design Option 2 would facilitate future train movements along 46th Street via a track alignment configuration further north within the roadway limits of 46th Street when compared to Design Option 1. This design option would also affect fewer private driveways on the south side of 46th Street than Design Option 1 that provide business egress and require less overall private property to facilitate a connection for trains from Malabar Yard to the Los Angeles Junction. The major components associated with the 46th Street Connector Design Option 2 are depicted on Figure 2-8.

Figure 2-7. Malabar Yard 46th Street Connector Design Option 1 (Southern Alignment) – Major Components and Project Footprint



LEGEND

- Permanent Impacts
- Temporary Impacts
- Proposed Curb and Median
- Proposed New Track
- Realigned Spur Track
- Existing Track
- Proposed Traffic/Railroad Gate
- Flasher

1. Existing At-Grade Crossing Enhancement - Pacific Blvd.
   - New Traffic/RR Signals, Flashers and Gates
   - New Medians/Curbline and Roadway Reconfiguration
   - Removal of On Street Parking at Intersection
2. Realigned Spur Track
3. 46th St Connector Track
4. New At-Grade Crossing, with Automatic Sliding Gates, for Business Egress
5. New At-Grade Crossing - Seville St.
   - New Traffic/RR Signals, Flashers and Gates
   - New Medians/Curbline and Roadway Reconfiguration
6. Existing At-Grade Crossing Enhancement - Seville St.
   - New RR Signals, Flashers and Gates
   - New Medians/Roadway Reconfiguration
   - New Driveway with Automatic Sliding Gates for Business Egress
7. Existing At-Grade Crossing Enhancement - 46th St.
   - New RR Signals, Flashers and Gates
   - New Medians\Roadway Reconfiguration
   - Removal of On Street Parking

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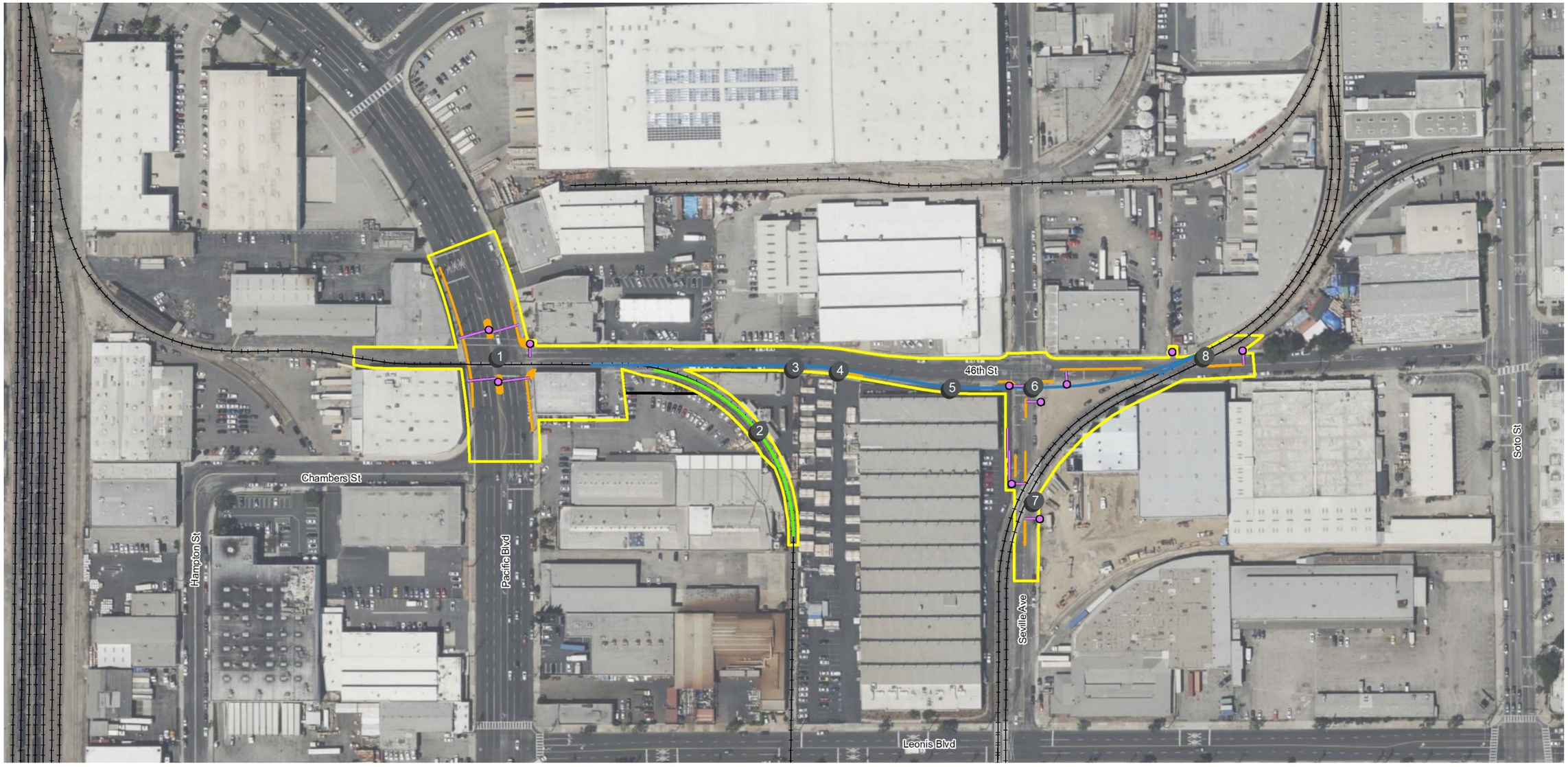
Figure 2-8. Malabar Yard 46th Street Connector Design Option 2 (Northern Alignment) – Major Components and Project Footprint



LEGEND

- Permanent Impacts
- Temporary Impacts
- Proposed Curb & Median
- Proposed New Track
- Realigned Spur Track
- Proposed Traffic/Railroad Gate
- Existing Track
- Flasher

1. Existing At-Grade Crossing Enhancement - Pacific Blvd.
   - New Traffic/RR Signals, Flashers and Gates
   - New Medians/Curbline and Roadway Reconfiguration
   - Removal of On Street Parking at Intersection
2. Realigned Spur Track
3. At-Grade Private Crossing for Business Egress
4. Two At-Grade Private Crossings for Business Egress
5. 46th St Connector Track
6. New At-Grade Crossing - Seville St.
   - New Traffic/RR Signals, Flashers and Gates
   - New Medians/Curbline and Roadway Reconfiguration
7. Existing At-Grade Crossing Enhancement - Seville St.
   - New RR Signals, Flashers and Gates
   - New Medians/Roadway Reconfiguration
   - New Driveway with Automatic Sliding Gates for Business Egress
8. Existing At-Grade Crossing Enhancement - 46th St.
   - New RR Signals, Flashers and Gates
   - New Medians\Roadway Reconfiguration
   - Removal of On Street Parking

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2.4 Construction Summary

Table 2-3 provides a summary of the construction duration for each component, the number of construction workers anticipated to perform work on each component, anticipated quantities of materials, and the type of construction equipment that is anticipated to be used throughout construction of the Malabar Yard railroad improvements. As identified in Table 2-3, construction of the Malabar Yard railroad improvements would take up to 18 months with various overlapping construction activities for each improvement. Construction staging and assembly would occur within the limits of the Project footprint for the design options considered as depicted in Figure 2-9 and Figure 2-10, respectively. Staging area locations would be coordinated with the property acquisition process, to maximize available space in the footprint for staging and construction activities.

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Table 2-3. Malabar Yard Construction Worker, Quantities, and Equipment Summary[a]

Construction Components	Duration	Number of Construction Workers	Concrete (cubic yards)	Excavation/ Cut (cubic yards)	Fill (cubic yards)	Anticipated Construction Equipment
49th Street Closure						
Utility Relocations	18 Months	10	5	25	5	Concrete Transit Mixer (1); Haul Truck – 6 cy capacity (3); Rubber Frontend Loader (2); Other Construction Equipment (4)
Cul-de-Sac and Driveway Modification	6 Months	10	1080[b]	—	—	Concrete transit mixer (1); haul truck – 6 cy capacity (3); rubber frontend loader (2); other construction equipment (4)
Bollard Installation	1 Month	5	5	10	—	Bobcat or Backhoe loader (1)
Track Replacement (120-Foot Section, 7 Tracks)	1 Month	5	—	850[b]	400[b]	Flatbed truck, Rubber Frontend loader (2), On track equipment, Track and Tie Handling Equipment (1); Ballast Tamper (1); Back hoe loader (1)
46th Street Connector						
Building Demolition	3 Months	10	—	—	—	Bobcat or backhoe loader (2); haul truck – 6 cy capacity (3); other construction equipment (4)

Table 2-3. Malabar Yard Construction Worker, Quantities, and Equipment Summary[a]						
Utility Relocation	18 Months	10	5	25	5	Concrete Transit Mixer (1); Haul Truck – 6 cy capacity (3); Rubber Frontend Loader (2); Other Construction Equipment (4)
At-Grade Crossing Enhancements (Pacific Avenue, 46th Street, Seville Avenue)	2 Months	10	5	25	5	Track and Tie Handling Equipment (1); Ballast Tamper (1); Crawler Tractor (1); Other Construction Equipment (6); Excavator (2); Concrete Transit Mixer (1); Haul Truck – 6 cy capacity (3)
1,000-Foot Connector Track	4 Months	10	—	1100[b]	550[b]	Track and Tie Handling Equipment (1); Ballast Tamper (1); Crawler Tractor (1); Other Construction Equipment (6); Excavator (2)
Realigned Spur Track	1 Month	10	—	—	—	Track and Tie Handling Equipment (1); Ballast Tamper (1); Crawler Tractor (1); Other Construction Equipment (6); Excavator (2)

Table 2-3. Malabar Yard Construction Worker, Quantities, and Equipment Summary[a]

New At-Grade Crossing (46th Street)	2 Months	10	5	25	5	Track and Tie Handling Equipment (1); Ballast Tamper (1); Crawler Tractor (1); Other Construction Equipment (6); Excavator (2); Concrete Transit Mixer (1); Haul Truck – 6 cy capacity (3)

Note:
[a] ***The number of construction workers, quantities, anticipated construction equipment, and haul truck sizes for track-related phases and utility relocations were provided by CHSRA (CHSRA 2020).***
[b] ***Quantities account for subgrade excavation and construction of new ballast and track.***
CHSRA=California High-Speed Authority

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Figure 2-9. Construction Staging/Assembly Areas (49th Street Closure and 46th Street Connector Design Option 1)

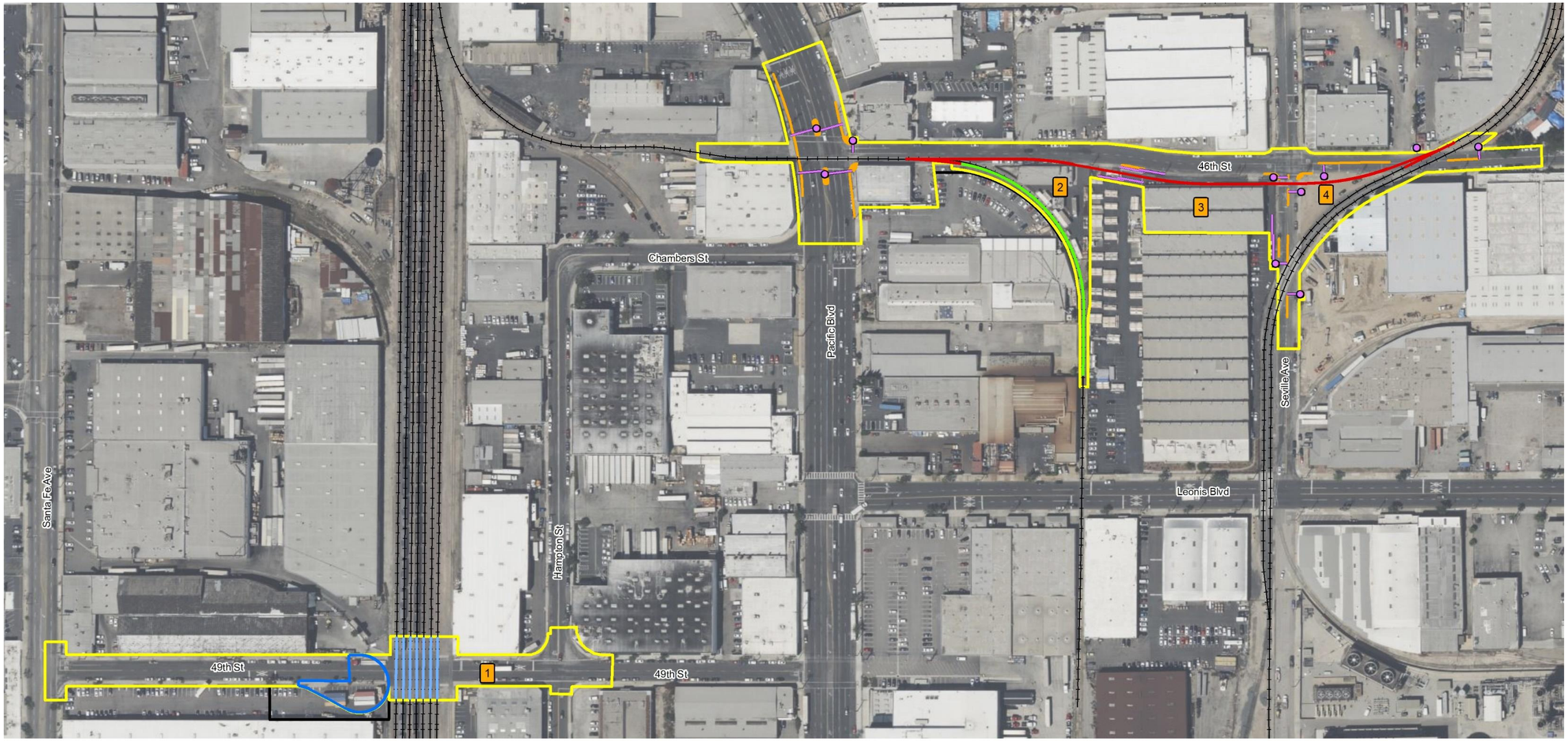

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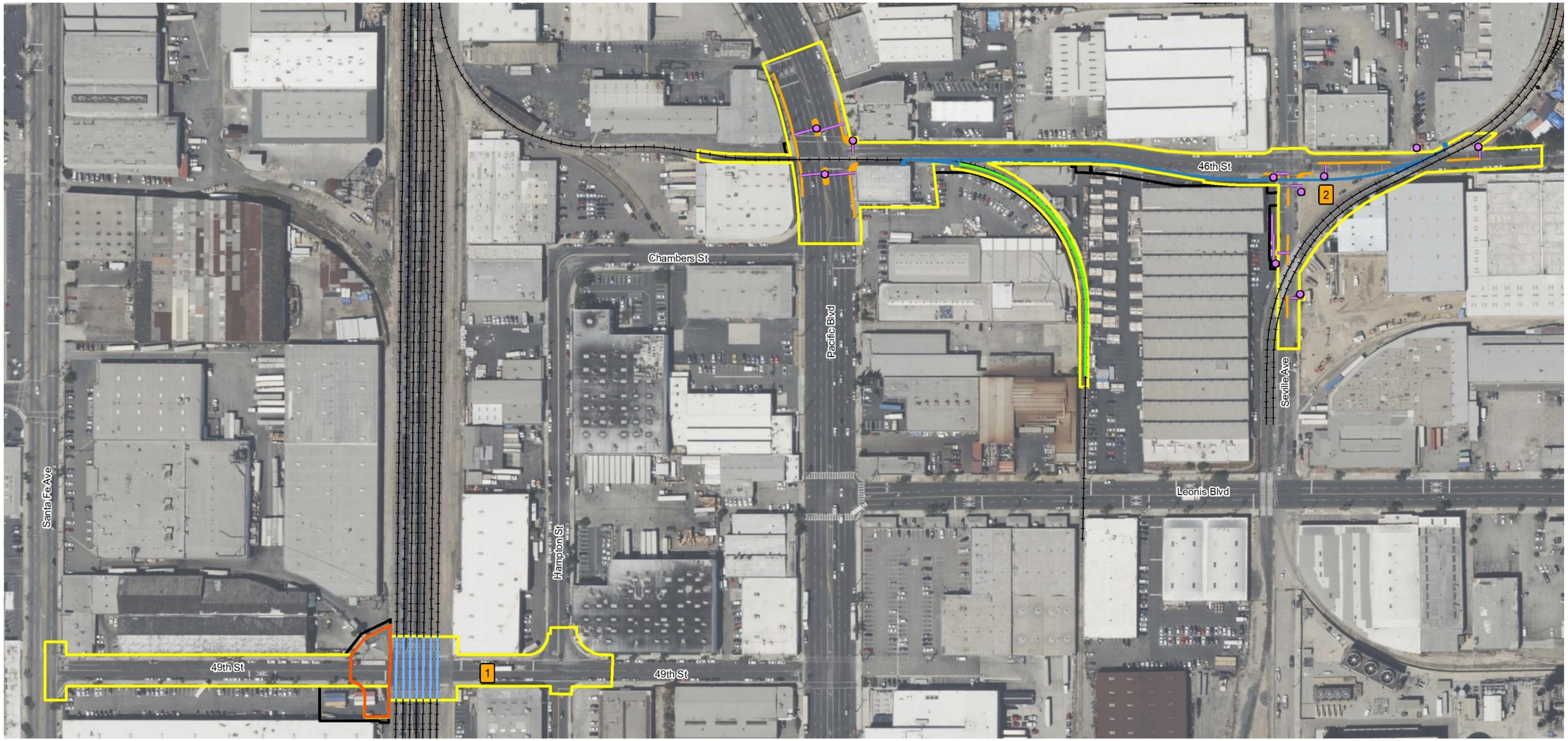
Figure 2-10. Construction Staging/Assembly Areas (49th Street Closure and 46th Street Connector Design Option 2)



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2.5 Summary of Potentially Affected Parcels

Table 2-4 and Figure 2-11 provide a summary of the 14 properties that would be directly affected by construction of the Malabar Yard railroad improvements at 49th Street and 46th Street for either of the design options considered.

Table 2-4. Summary of Properties Affected

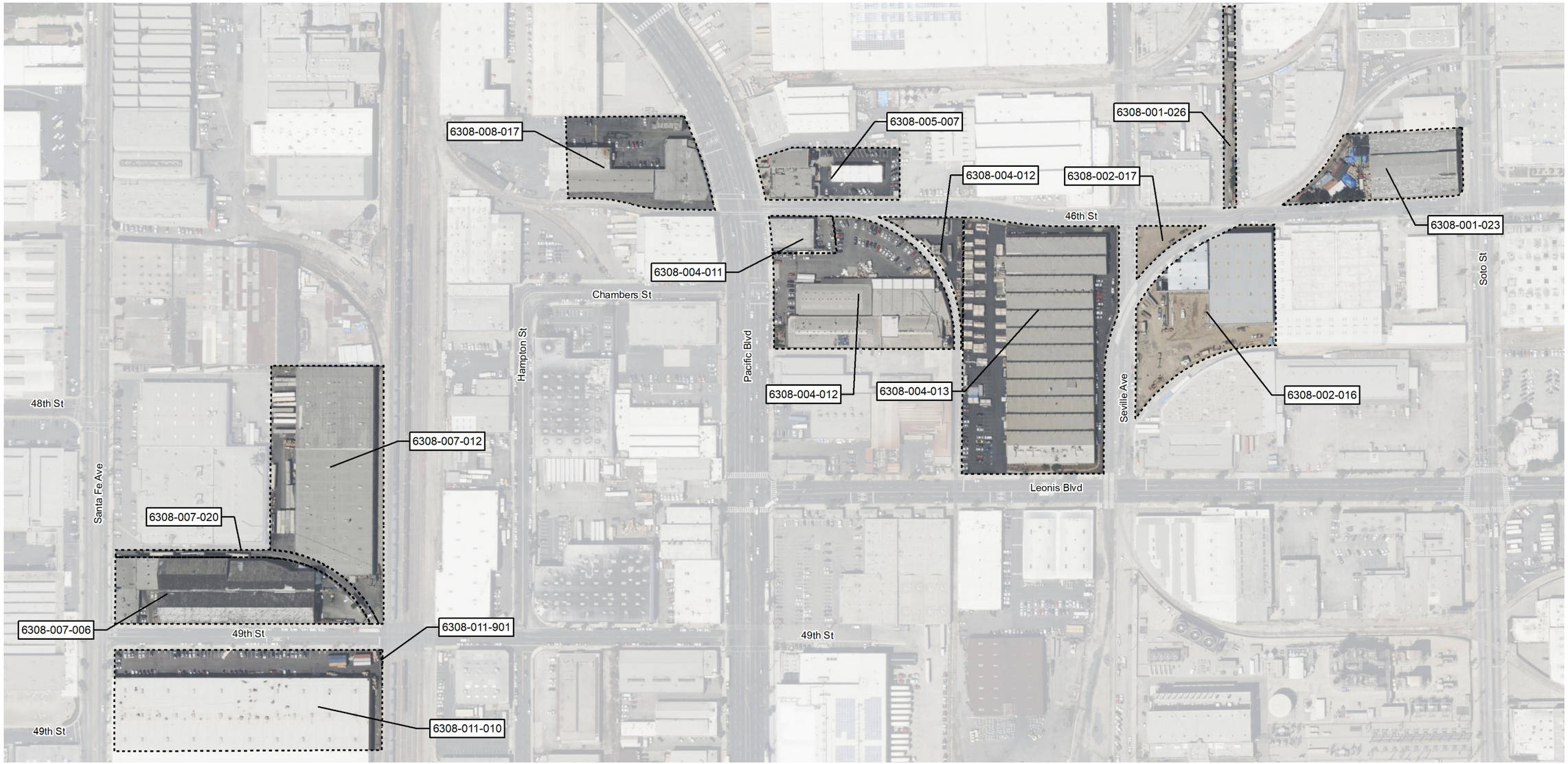
APN	Address	Description of Property Impact	
		Design Option 1	Design Option 2
49th Street Closure			
6308-011-010	4900 Santa Fe Avenue	TCE for property access and parking. Partial acquisition for off-set cul-de-sac and loss of parking.	TCE for property access and parking. Partial acquisition for hammerhead cul-de-sac and loss of parking.
6308-007-006	4848 Santa Fe Avenue	TCE for driveway modification	TCE for driveway modification. Partial acquisition for hammerhead cul-de-sac.
6308-007-012	4800-4824 Santa Fe Avenue	TCE for driveway modification	TCE for driveway modification. Partial acquisition for hammerhead cul-de-sac.
6308-007-020	4800-4824 Santa Fe Avenue	TCE for driveway modification	TCE for driveway modification. Partial acquisition for hammerhead cul-de-sac.
6308-011-901	No Address Available	Full acquisition and land use conversion of agency owned parcel for cul-de-sac	Land use conversion of agency owned parcel for cul-de-sac
46th Street Connector			
6308-008-017	4585 Pacific Boulevard	TCE for driveway modification	TCE for driveway modification
6308-004-011	4600 Pacific Boulevard	Full acquisition of parcel and full building demolition	Full acquisition of parcel and full building demolition
6308-004-012	4618 Pacific Boulevard	TCE and partial acquisition of parcel. Driveway modification; shift fence/parking on west side of spur; full building demolition on east side of spur	TCE and partial acquisition of parcel. Driveway modification; shift fence/parking on west side of spur.
6308-004-013	2665 Leonis Boulevard	TCE and partial acquisition of parcel for driveway modification, as well as partial building demolition (cut and reface)	TCE and partial acquisition of parcel for driveway modification.

Table 2-4. Summary of Properties Affected

APN	Address	Description of Property Impact	
		Design Option 1	Design Option 2
6308-002-017	No Address Available	Full acquisition of parcel for connection track	Full acquisition of parcel for connection track
6308-001-023	4535 Soto Street	Partial acquisition of small corner of parcel for gate arm	Partial acquisition of small corner of parcel for gate arm
6308-001-026	No Address Available	Partial acquisition to install sign	Partial acquisition to install sign
6301-002-016	4620 Seville Avenue	Partial acquisition of small corner of parcel for gate arm	Partial acquisition of small corner of parcel for gate arm
6308-005-007	4580 Pacific Boulevard	Partial acquisition for curb modification and installation of gate arm	Partial acquisition for curb modification and installation of gate arm

Notes:
APN=Assessor Parcel Number; TCE=temporary construction easement

Figure 2-11. Potentially Affected Parcels



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3.0 Affected Environment and Environmental Consequences

3.1 Introduction to the NEPA Analysis for Malabar Yard Railroad Improvements

This section provides an overview of how the Malabar Yard railroad improvements are analyzed within this environmental evaluation, environmental topics considered in the environmental evaluation, the approach for conducting the analysis, an outline of the topical areas considered as part of the analysis, and format for the environmental analysis in each topical section.

CHSRA and Metro prepared this documentation as a supporting appendix to the EIS/SEIR to disclose potential impacts of the Malabar Yard railroad improvements, in compliance with the National Environmental Policy Act (NEPA; 42 United States Code [USC] Section 4321 et seq.), the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508),[1] Federal Railroad Administration (FRA) Procedures for Considering Environmental Impacts (FRA's Environmental Procedures) (*Federal Register* [FR] 64(101), 28545-28556, May 26, 1999),[2] 23 USC Section 139, and the NEPA Assignment Memorandum of Understanding (MOU). Pursuant to the requirements of the MOU between the FRA and State of California, FRA's Environmental Procedures are used to determine environmental effects.

3.1.1 Environmental Topics Included in the Analysis

Chapter 3.0 of this environmental evaluation provides an analysis of the potential direct and indirect effects of the Malabar Yard railroad improvements, as described in Chapter 2 of this document.

The following environmental topics are addressed in Section 3.2 through 3.17:

- Section 3.2, Land Use and Planning

[1] The Council on Environmental Quality (CEQ) issued new regulations, effective April 20, 2022, updating the National Environmental Policy Act (NEPA) implementing procedures at 40 Code of Federal Regulations (CFR) Parts 1500–1508. However, because this environmental document was initiated prior to the effective date, it is not subject to the new regulations, and CHSRA is relying on the regulations as they existed on the date of the initial Notice of Intent, May 31, 2016. Therefore, all citations to CEQ regulations in this environmental document refer to the 1978 regulations and the 1986 amendment, 51 *Federal Register* (FR) 15618 (Apr. 25, 1986).

[2] While this environmental document was being prepared, the Federal Railroad Administration (FRA) adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

- Section 3.3, Transportation
- Section 3.4, Visual Quality and Aesthetics
- Section 3.5, Air Quality and Global Climate Change
- Section 3.6, Noise and Vibration
- Section 3.7, Biological and Wetland Resources
- Section 3.8, Floodplains, Hydrology, and Water Quality
- Section 3.9, Geology, Soils, and Seismicity
- Section 3.10, Hazardous Waste and Materials
- Section 3.11, Public Utilities and Energy
- Section 3.12, Cultural Resources and Paleontological Resources
- Section 3.13, Economic and Fiscal Impacts
- Section 3.14, Safety and Security
- Section 3.15, Socioeconomics and Communities Affected
- Section 3.16, Environmental Justice
- Section 3.17, Section 4(f)

3.1.2 Environmental Topics Requiring No Further Evaluation

Using FRA's Environmental Procedures, the following environmental topics are not further evaluated for the reasons discussed below.

3.4, Visual Quality and Aesthetics

- ***Scenic Vistas or Highways*** – The California Department of Transportation (Caltrans) maintains a list of highways that are eligible or have been designated as scenic highways. The Caltrans' State Scenic Highway Map was reviewed to determine if local roadways are eligible or a designated scenic highway. Local planning documents were also reviewed to determine the presence of any scenic vistas in the Project study area. There are no designated scenic vistas or state scenic highways in the Malabar Yard study area. Therefore, any combination of design options for the Malabar Yard railroad improvements would not damage scenic vistas or state scenic highways and no effect would occur.

3.7, Biological and Wetland Resources

- ***Federally Listed or Candidate Plant or Animal Species –*** The Biological Study Area (BSA, synonymous with Project footprint for the design options considered where physical disturbance would occur) does not include suitable habitat or designated critical habitat for plant or animal species that are federally listed or candidates for listing by United States

Fish and Wildlife Service (USFWS). Therefore, there is no potential for direct or indirect effects on federally listed or candidate plant or animal species, and therefore, there is no need for Section 7 consultation under the Endangered Species Act. No effect would occur.

- ***Riparian Habitat or Other Sensitive Natural Communities –*** The BSA does not contain riparian habitat or other sensitive natural communities identified by USFWS. Therefore, there is no potential for direct or indirect effects on riparian habitat or other sensitive natural communities. No effect would occur.
- ***Waters of the U.S., including Wetlands –*** The BSA does not contain waters of the U.S., including federally protected wetlands, as defined by Section 404 of the Clean Water Act (CWA). Therefore, there is no potential for direct or indirect effects on waters of the U.S., including federally protected wetlands. No effect would occur.
- ***Invasive Plant Species –*** The majority of the BSA is made up of paved roadways, buildings, railroad tracks, and parking lots. Disturbed habitat includes areas that have been previously physically disturbed but continue to retain a soil substrate and that consists of predominantly nonnative, weedy plant species. Due to the large amount of developed land and disturbed habitat already present in the BSA, an increase or spread of nonnative invasive plant species is not expected. Per Executive Order (EO) 13751, no invasive species will be used for landscaping. No effect would occur.
- ***Wildlife Dispersal Corridors and Linkages –*** The BSA is located within a developed urban area more than 5 miles from any significant open space patches. While there are larger open space patches north and east of the BSA, these areas are separated from the Malabar Yard railroad improvements by I-5 and I-10. The closest reach of the Los Angeles River, a concrete-lined flood control channel surrounded by urban, commercial, residential, and industrial development, is located less than 1 mile northeast of the BSA. The Los Angeles River may support some north to south movement for urban-adapted wildlife, but this function would be limited due to the lack of vegetated cover within the river. Furthermore, there is no vegetative cover within the BSA or between the BSA and the Los Angeles River; therefore, the area within the BSA is not expected to function efficiently as a wildlife movement or migration corridor. No effect would occur.

3.8, Floodplains, Hydrology, and Water Quality

- ***Construction of Structures within the 100-year Flood Hazard Area*** – The Malabar Yard study area is not within a 100-year flood hazard area (Figure 3.1-1). The Malabar Yard study area is located in Zone X. Zone X represents a 0.2 percent annual chance flood (i.e., 500-year flood); therefore, the implementation of the Malabar Yard railroad improvements would not involve the construction of structures within the 100-year flood hazard area that would otherwise impede or redirect floods. No effect would occur.
- ***Coastal Zone Management*** – The Malabar Yard study area is outside of the coastal zone (Figure 3.1-2). A discussion of the effects on coastal resources or potential conflicts with

the Coastal Zone Management Act (16 USC 1451 et seq.) is not applicable. No effect would occur.

3.9, Geology, Soils, and Seismicity

- ***Surface Fault Rupture –*** The Malabar Yard study area does not traverse an active fault or a designated Alquist-Priolo Earthquake Fault Zone; therefore, surface fault rupture within the Malabar Yard study area is unlikely. No effect would occur.
- ***Landslides –*** The Malabar Yard study area is nearly flat and is not adjacent to any hills or steep slopes. Therefore, landslides within the Malabar Yard study area are unlikely. No effect would occur.

3.10, Hazardous Waste and Materials

- ***Hazardous Emissions or Handling within 0.25 mile of an Existing or Proposed School –*** There are no schools located within the Malabar Yard study area. The nearest school is located outside of the Malabar Yard study area and outside of the 0.25-mile buffer from the Project footprint for the design options considered. No effect would occur.

3.11, Public Utilities and Energy

- ***Wastewater Treatment Capacity and Infrastructure*** – Any combination of design options for the Malabar Yard railroad improvements would result in storage and movement of freight trains. As no population growth would occur from these railroad improvements, no additional demand for treatment capacity or new wastewater facilities would be required. No effect would occur.

3.15, Socioeconomics and Communities Affected

- Local Government Services (Schools and Libraries)
    - **Schools –** The Malabar Yard railroad improvements do not include residential development that would directly generate population growth. As no residential units are proposed, there would not be an increase in the number of school-age children in the area, and thus, no new demand for educational services would be generated. The schools located in the vicinity of the Malabar Yard study area would not be physically impacted or altered in a way that would cause relocation or need for new facilities. No effect would occur.
    - **Libraries –** The Malabar Yard railroad improvements do not include residential development that would directly generate population growth or increase demand for libraries. Operation of the Malabar Yard railroad improvements are not expected to substantially affect access to libraries or disrupt the basic functions of the facilities in the Malabar Yard study area. No effect would occur.

- ***Recreational Opportunities –*** There are no parks or recreational facilities open to the public in the Malabar Yard study area. Parks and recreational facilities located outside of the Malabar Yard study area would not be affected due to the nature of proposed railroad improvements. The Malabar Yard railroad improvements do not include residential development that would directly generate population growth or increase the demand for parks and recreational facilities. Therefore, no direct physical impacts or alterations to existing parks would result from the Malabar Yard railroad improvements and no effect would occur.
- ***Residential Displacements –*** No temporary or permanent residential displacements would occur as a result of the Malabar Yard railroad improvements. Therefore, construction of replacement housing would not be required. No effect would occur.
- ***Population Growth –*** While construction of any combination of design options for the Malabar Yard railroad improvements would generate 164 temporary jobs during construction, these jobs are expected to be filled by residents of Los Angeles, the City of Vernon, and surrounding communities. Therefore, no population growth is expected to occur from the Malabar Yard railroad improvements. No effect would occur.
- ***Community Cohesion –*** Any combination of design options for the Malabar Yard railroad improvements would not disrupt community cohesion because no residential communities or other established communities are located within the Project footprint for the design options considered. Effects related to the potential for physical division of a community (physical barriers) resulting from Malabar Yard railroad improvements are addressed in Section 3.2, Land Use and Planning. No effect would occur.

3.17, Section 4(f) and Section 6(f)

- ***Section 6(f) Properties –*** Section 6(f) of the Land and Water Conservation Fund (LWCF) Act of 1965 applies to certain recreational properties and prohibits the conversion of property acquired or developed with LWCF grants to a non-recreation or parkland purpose without the approval of the Department of the Interior National Park Service. The California Department of Parks and Recreation maintains a list of recommended projects to receive LWCF funding by county and city. The list also includes past projects completed using LWCF funds. The latest list released (LWCF 2023) was reviewed and no Section 6(f) properties were identified within 1,000 feet of the Malabar Yard study area. No future LWCF planned and programmed projects have been identified; therefore, further evaluation of Section 6(f) properties is not applicable. No effect would occur.

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Figure 3.1-1. Flood Insurance Rate Map for the Malabar Yard Study Area

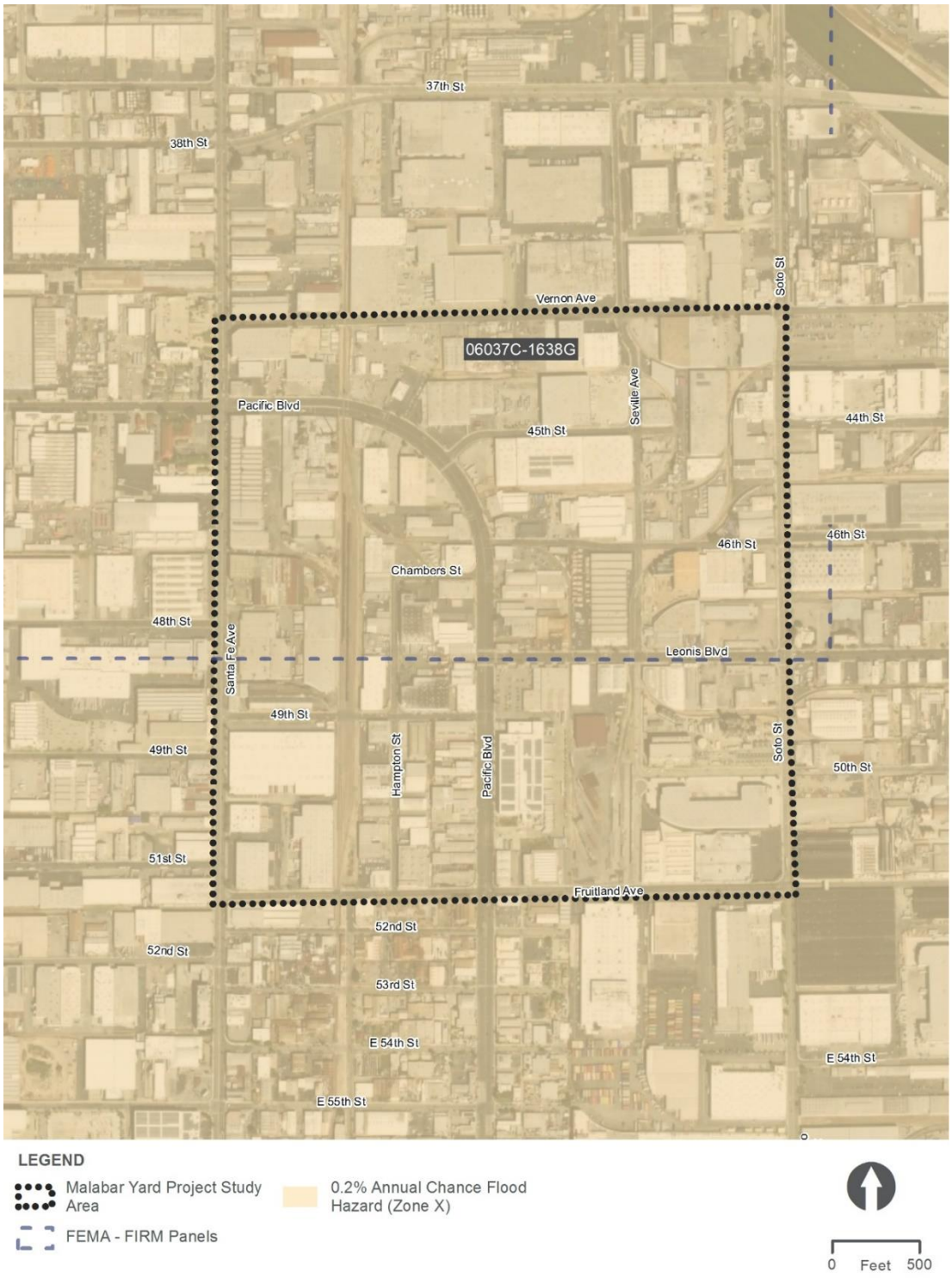

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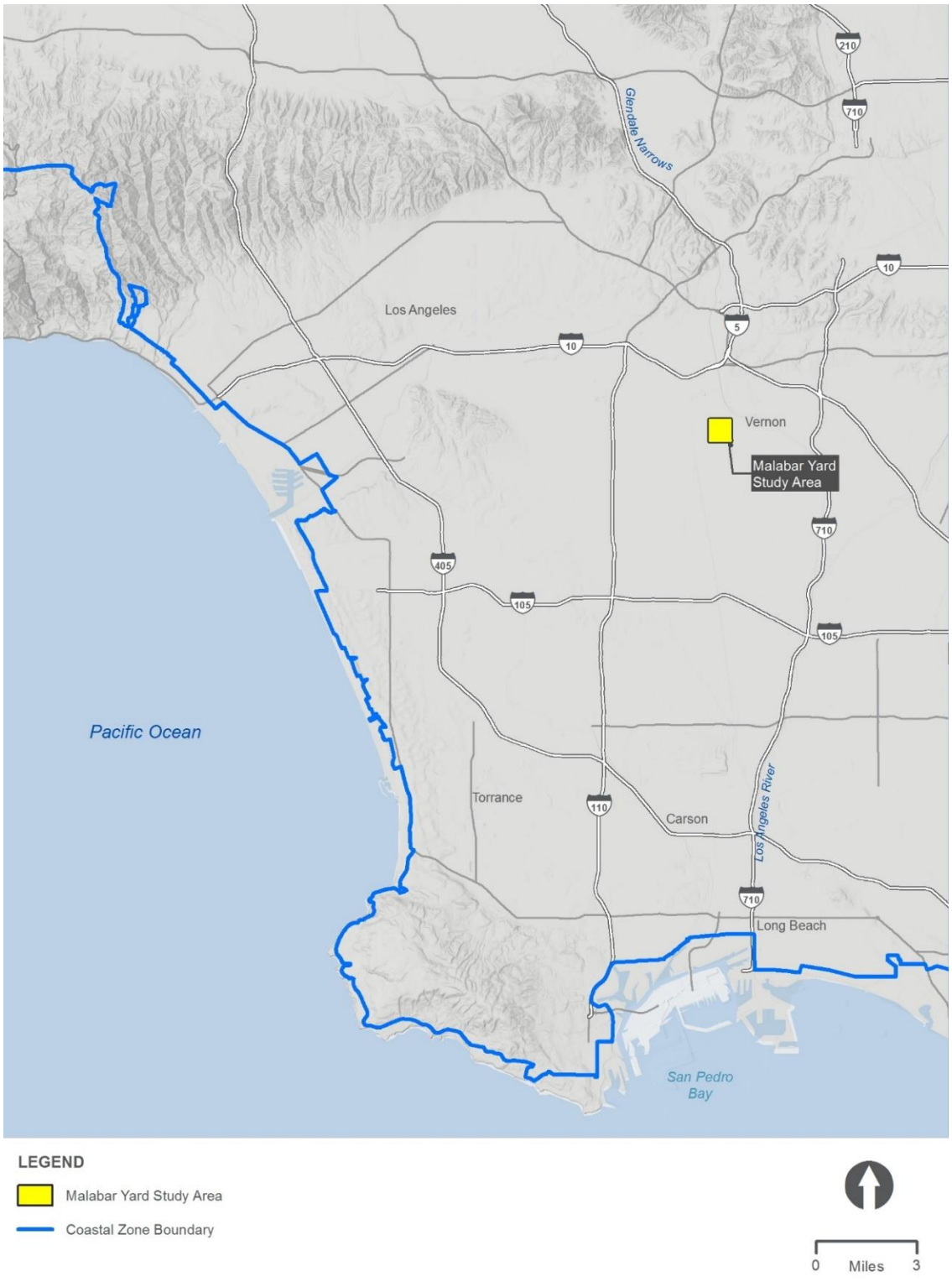
Figure 3.1-2. Coastal Zone and the Malabar Yard Study Area



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3.1.3 Format and Content Used in the Analysis

For each environmental topic section considered in Chapter 3.0, the basic format for the environmental analysis follows a standard outline. Sections 3.2 through 3.15 each provide an introduction to describe the environmental topic area considered (Introduction); presents the applicable laws, regulations, and plans relevant to each environmental topic area (Regulatory Framework); describes the methods and assumptions used for evaluating the potential environmental effects based on duration, context, and intensity of the impact (Methods for Evaluating Environmental Effects); presents existing conditions of the environmental setting (Affected Environment); presents the environmental effects that would result with or without the Malabar Yard railroad improvements (Environmental Consequences); and describes mitigation measures that would avoid or minimize adverse effects (Mitigation Measures). The content for each of these sections is described below under the following headings.

Introduction

This section provides a brief summary of the environmental topic to be analyzed and a summary of data sources used to prepare the environmental evaluation.

Regulatory Framework

This section contains the regulatory framework relevant to Project approvals or decisions for each environmental topic area being analyzed, including any applicable provisions of the FRA's Environmental Procedures; federal, state, and local laws and regulations; NEPA provisions; and other regulatory agency guidance.

Methods for Evaluating Environmental Effects

This section describes the methods, processes, procedures, and/or assumptions used to characterize the existing physical setting and baseline conditions associated with the affected environment and to evaluate the potential for adverse effects.

For each environmental topic area, a subsection describing the geographic area considered, and how it may be broadened or narrowed to properly characterize the affected environment or analyze direct or indirect effects of that specific resource, is provided. For example, the BSA in Section 3.7, Biological and Wetland Resources, and the Project footprint for the design options considered in Section 3.11, Public Utilities and Energy, are the geographic areas considered for these environmental topics and are used to determine potential effects.

For each environmental topic area, a subsection (Determination of Effects) discusses how an adverse effect is triggered, based on the affected environment and geographic area considered to determine potential for impacts, and in consideration of both context and intensity, as outlined in 40 CFR 1508.27.

Affected Environment

This discussion provides a description of the existing social, economic, or environmental conditions of each environmental issue area (i.e., baseline conditions or setting). For the purpose of this document and pursuant to the CEQ NEPA regulations (40 CFR Parts 1500-1508), the affected environment is used to determine the effects associated with the Malabar Yard railroad improvements. The affected environment is based on the environmental conditions that existed at the time the Revised Notice of Intent (NOI) was published in 2020 and has been updated to account for certain conditions in the Malabar Yard study area that might influence the regulatory context (new laws or regulations) or where potential adverse effects may occur.

Environmental Consequences

The environmental consequences discussion describes the potential environmental effects associated with the design options for the Malabar Yard railroad improvements. The Malabar Yard railroad improvements, which are comprised of two design options for the 46th Street Connector and the 49th Street Closure are located generally in the same area; therefore, effects are generally the same and the environmental consequences discussion applies to both design options at both locations, respectively. However, the evaluation is subdivided, as appropriate, when effects differ for each design option. Effects that would occur if the Malabar Yard railroad improvements were not implemented are also considered and identified (No Action Evaluation). The subtopics are listed numerically and sequentially throughout each section. For example, subtopics in Section 3.2, Land Use and Planning, are identified as 3.2-A, 3.2-B, and so on.

Evaluation

The evaluation of potential effects is based on applicable provisions of FRA's Environmental Procedures, factual or scientific information, regulatory standards of federal agencies, and professional practice. Where appropriate, the evaluation is based on federal standards (e.g., the air quality evaluation is based on federal ambient air quality standards and the noise evaluation is based on Federal Transit Administration [FTA] criteria). This evaluation also encompasses the factors considered under NEPA to determine the context and the intensity of potential effects. The *context* and *intensity* (including duration) of impacts associated with the Malabar Yard railroad improvement are considered to fully illustrate the impacts and facilitate comparison between the conditions with or without the improvements.

- *Context* refers to the environment in which the impact occurs and may include affected interests of resources, the specific locality, the region, or society as a whole, depending on the resource.
- *Intensity* refers to the severity of the impact; its analysis encompasses the type, quality, and sensitivity of the resource involved; the location and extent of the impact; the duration of the impact; whether the action threatens a violation of federal or state law or local requirements imposed for the protection of the environment; and other intensity considerations (40 CFR 1508.27).

For the Malabar Yard railroad improvements, the evaluation is subdivided, as appropriate, to differentiate between direct and indirect effects that could occur during construction or operations, or when the effects may differ for each design option considered. Beneficial and adverse effects fall into the following categories:

- ***Direct Effects*** – These effects would be caused by direct physical impacts that would occur during construction and operation of the Malabar Yard railroad improvements. The environmental analysis addresses potential effects from temporary (short-term) construction activities within the Project footprint for the design options considered including, but not limited to, demolition of existing infrastructure, effects associated with site development and required infrastructure and roadway improvements, and construction-related effects associated with staging activities, fill activities, and construction traffic. An analysis of potential effects resulting from long-term operations is also provided for each environmental topic.
- ***Indirect Effects*** – These effects are anticipated to occur later in time or are farther removed in distance but are reasonably foreseeable as a result of implementation of the Malabar Yard railroad improvements. Examples of indirect effects include changes in land use patterns or changes in the physical environment (such as downstream surface water quantity). Indirect effects may also result from implementation of potential mitigation measures.

The environmental analysis places emphasis on distinguishing between the following effects:

- Short-term construction and long-term operational effects; and,
- Effects associated with the design options considered.

Mitigation Measures

This discussion identifies mitigation measures proposed to minimize the magnitude and severity of, or compensate for, adverse effects in accordance with NEPA Guidelines (40 CFR Part 1502.16(h) and 40 CFR Part 1508.20). Mitigation measures for the Malabar Yard railroad improvements include “MY” in the nomenclature to differentiate mitigation measures associated with the infrastructure improvements as part of the Build Alternative.

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3.2 Land Use and Planning

This section provides an evaluation of potential effects related to land use and planning that may result upon implementation of the Malabar Yard railroad improvements.

3.2.1 Regulatory Framework

Table 3.2-1 identifies and summarizes applicable federal, state, and local laws, regulations, and plans relevant to land use and planning.

Table 3.2-1. Applicable Laws, Regulations, and Plans for Land Use and Planning

Law, Regulation, or Plan	Description
Federal	
Federal Railroad Administration, *Procedures for Considering Environmental Impacts*, *Sec. 14(n)(15),* 64 *Federal Register* 28545-28556 (1999)[1]	The *Federal Railroad Administration's Procedures for Considering Environmental Impacts* require an assessment of impacts on local land use controls and comprehensive regional planning as well as development within the affected environment, including, where applicable, other proposed federal actions in the area. Where inconsistencies or conflicts exist, the evaluation should include a description of reconciliation and/or the reason for proceeding notwithstanding the absence of full reconciliation. If conflicts would result from the project, early notification to the applicable agency would be required, as would the incorporation of such conflicts into the environmental document.
Council for Environmental Quality 40 Code of Federal Regulations 1502.16[2]	The CEQ NEPA implementing regulations require a discussion of possible conflicts between the proposed action and the objectives of federal, regional, state, and local land use plans, policies, and controls for the area concerned.
State	
State Planning and Zoning Laws (California Government Code Section 65300)	California Government Code Section 65300 et seq. establishes the obligation of cities and counties to adopt and implement general plans. The State Zoning Law (California Government Code Section 65800 et seq.) establishes that zoning ordinances, which are laws that define allowable land uses within a specific zone district, are required to be consistent with the general plan and any applicable specific plans. A specific plan is another planning device that governs a smaller land area than the general plan but must be consistent with the overarching general plan. Specifically,

[1] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

[2] The CEQ issued new regulations, effective April 20, 2022, updating the NEPA implementing procedures at 40 CFR Parts 1500–1508. However, because this environmental document was initiated prior to the effective date, it is not subject to the new regulations and CHSRA is relying on the regulations as they existed on the date of the initial NOI, May 31, 2016. Therefore, all citations to CEQ regulations in this environmental document refer to the 1978 regulations and the 1986 amendment, 51 *FR* 15618 (Apr. 25, 1986).

Table 3.2-1. Applicable Laws, Regulations, and Plans for Land Use and Planning

Law, Regulation, or Plan	Description
	it implements the general plan in a particular geographic area (California Government Code Section 65450).
Sustainable Communities and Climate Protection Act of 2008 (Sustainable Communities Act, Senate Bill 375)	SB 375 provides for greater coordination of state housing and environmental and transportation laws and requires regional MPOs to develop an SCS as part of the RTP. SCAG is the MPO for the Project study area.
Regional	
Southern California Association of Government 2020 Regional Transportation Plan/Sustainable Communities Strategy (2020)	The RTP/SCS is a long-range RTP that provides a blueprint to coordinate the regional transportation system by creating a vision for transportation investment throughout the region and identifying regional transportation and land use strategies to address mobility needs and help the region achieve state GHG emission reduction goals. Amendment #2 to the 2020 RTP/SCS: Connect So Cal included the 2023FTIP, and the Project is listed as #LA0G1051.
Local	
City of Vernon General Plan Land Use Element (2007)	The City of Vernon's General Plan Land Use Element establishes the broad, general policies for how properties are used in Vernon, including location, distribution, type, and intensity of development, with the overarching goal of maintaining Vernon as an industrial city. The General Plan and Land Use Element goals and policies provide guidance to the City Council and City officials regarding zoning, land subdivision, public improvements, and physical development programs. The Land Use Element and the circulation portion of the Circulation and Infrastructure Element are closely tied.
City of Vernon Municipal Code, Chapter 26 Zoning (2016)	The City of Vernon's Zoning Ordinance establishes development rules for the City, carrying out the objectives laid out in the General Plan. The purpose of the City of Vernon Zoning Ordinance is to designate, regulate, and restrict the use, location, and size of buildings, ancillary structures, and land for industrial uses and other permitted purposes and establish performance and development standards in order to protect public health, safety, and welfare. To achieve this, one Industrial Zone within the city and various Overlay Zones have been deemed best suited to carry out these regulations.
City of Vernon Bicycle Master Plan (2017)	The City of Vernon's Bicycle Master Plan serves as the guiding document for the development of a safe and comfortable network of bicycle facilities linking working centers and community destinations within the City and the larger regional transportation network. The plan identifies Pacific Avenue as a future Class II bicycle facility with on-street bike lanes.

Notes:
CEQ=Council on Environmental Quality; FTIP=Federal Transportation Improvement Program; GHG=greenhouse gas; MPO=Metropolitan Planning Organizations; SB=Senate Bill; RTP=Regional Transportation Plan; SCAG=Southern California Association of Governments; SCS=Sustainable Communities Strategy

3.2.2 Methods for Evaluating Environmental Effects

Topics Considered

For the Malabar Yard railroad improvements, an evaluation was performed to determine if they would:

- Alter land use patterns;
- Cause incompatibility with existing or planned land uses;
- Physically divide an established community; and/or
- Conflict with land use plan policies or local land use controls.

Geographic Area Considered

The Malabar Yard study characterizes the affected environment and the Project footprint for the Malabar Yard railroad improvements is the geographic area considered to determine potential effects related to land use and planning.

Methodology

The City of Vernon's General Plan, and other planning and engineering documents were utilized to identify information related to existing on-the-ground land uses and site conditions, planned land use designations, and zoning classifications in the Malabar Yard study area. A windshield survey was also performed in February 2023 to verify existing conditions in the Malabar Yard study area. An evaluation was conducted in the context of whether the Malabar Yard railroad improvements align with the intent of applicable land use plans and policies.

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects for each of the topics considered is described below.

Alteration of Land Use Patterns

Project-related effects would be considered adverse if land use conversions would render properties unusable after implementation of construction or operation.

Compatibility with Existing or Planned Land Uses

Project-related effects would be considered adverse if staging areas, establishment of construction easements, or long-term operation of the Malabar Yard railroad improvements would result in compatibility issues on adjacent land uses (e.g., temporary or permanent increases in noise levels, dust, emissions, or potential access disruptions).

Division of an Established Community

Project-related effects would be considered adverse if the location of Malabar Yard railroad improvements would physically divide an established community or impede access and mobility within an existing community.

Conflict with Land Use Plan Policies

Project-related effects would be considered adverse if, after implementation of applicable mitigation measures, conflicts with applicable land use plans and policies would remain.

3.2.3 Affected Environment

This section describes the existing land uses, City of Vernon General Plan land use designations, and zoning classifications to characterize the affected environment.

Existing Land Uses

Malabar Yard is located approximately 3 miles south of LAUS in the City of Vernon, California. The existing land uses within the Malabar Yard study area consist of industrial and mixed commercial uses, transportation-railroad uses, and communications and utilities-related uses. Existing businesses in the area include warehouses, wholesale and distribution services, and other commercial enterprises. Roadways in the vicinity of the Malabar Yard railroad improvements include Pacific Boulevard, Seville Avenue, 46th Street, and 49th Street. Substantial public outreach was performed to identify the types of businesses within the affected environment.

General Plan Land Use Designations

The City of Vernon is built out with little undeveloped land. New development generally occurs as new buildings are constructed to replace older facilities on previously developed sites. As depicted on Figure 3.2-1, the General Plan land use designation for the entirety of the Malabar Yard study area is Industrial with some portions of the study area are traversed by a Commercial overlay.

Zoning Classifications

While land is zoned predominantly for industrial uses, there is a Commercial Overlay Zone that runs along Santa Fe Avenue from 25th Street south to E. Slauson Avenue, and along Pacific Boulevard from Santa Fe Avenue to Fruitland Avenue. The Commercial Overlay Zone accommodates retail, commercial, service, and restaurant uses allowed by Conditional Use Permit to support the needs of the daily employee population. There is a total of 88 households in the City of Vernon (U.S. Census Bureau 2021e), clustered in four areas outside the Malabar Yard study area. Figure 3.2-2 depicts the existing zoning classifications and overlay zones for the properties within the Malabar Yard study area (City of Vernon 2015, 2023).

Figure 3.2-1. General Plan Land Use Designations within the Malabar Yard Study Area

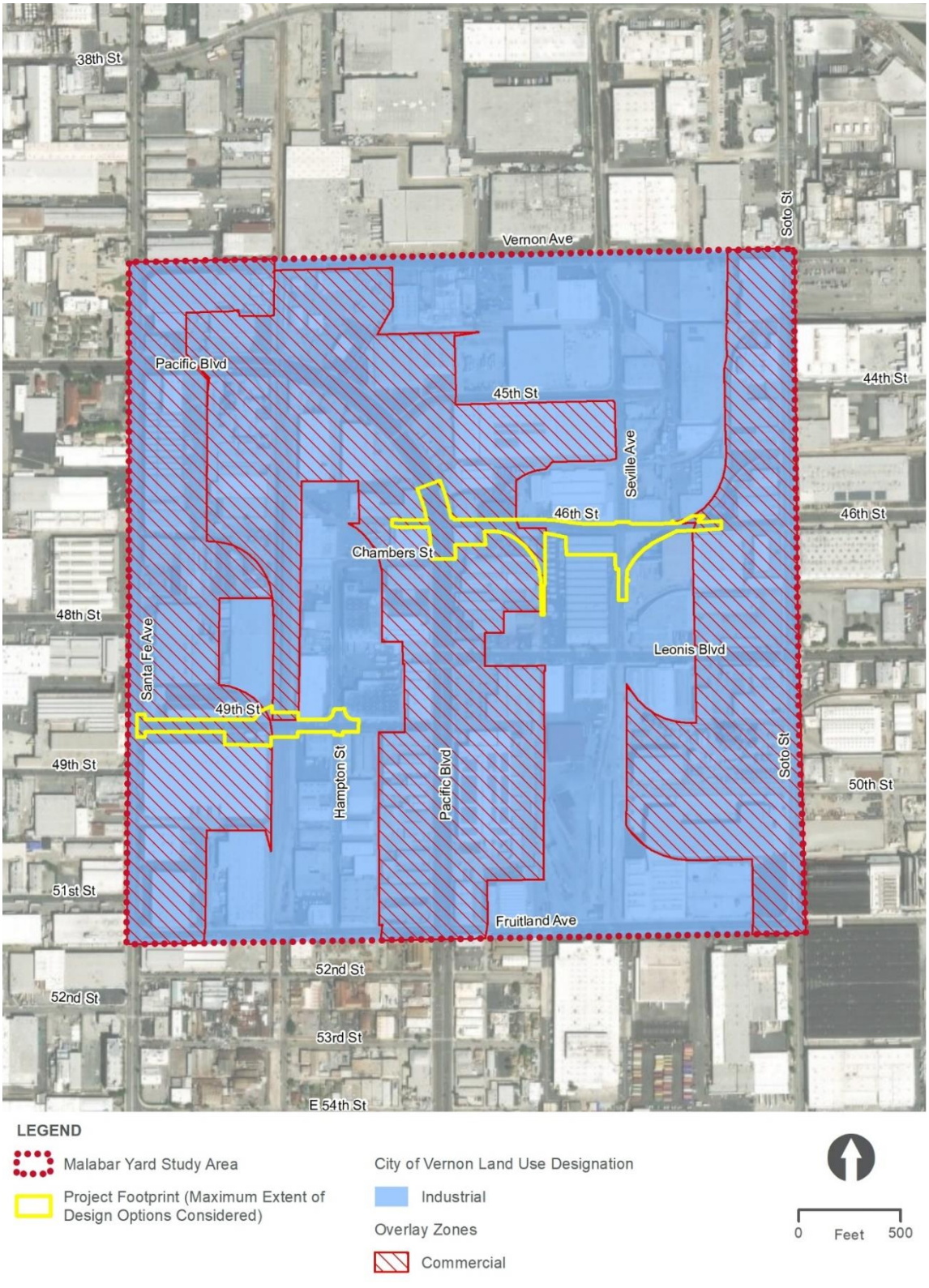

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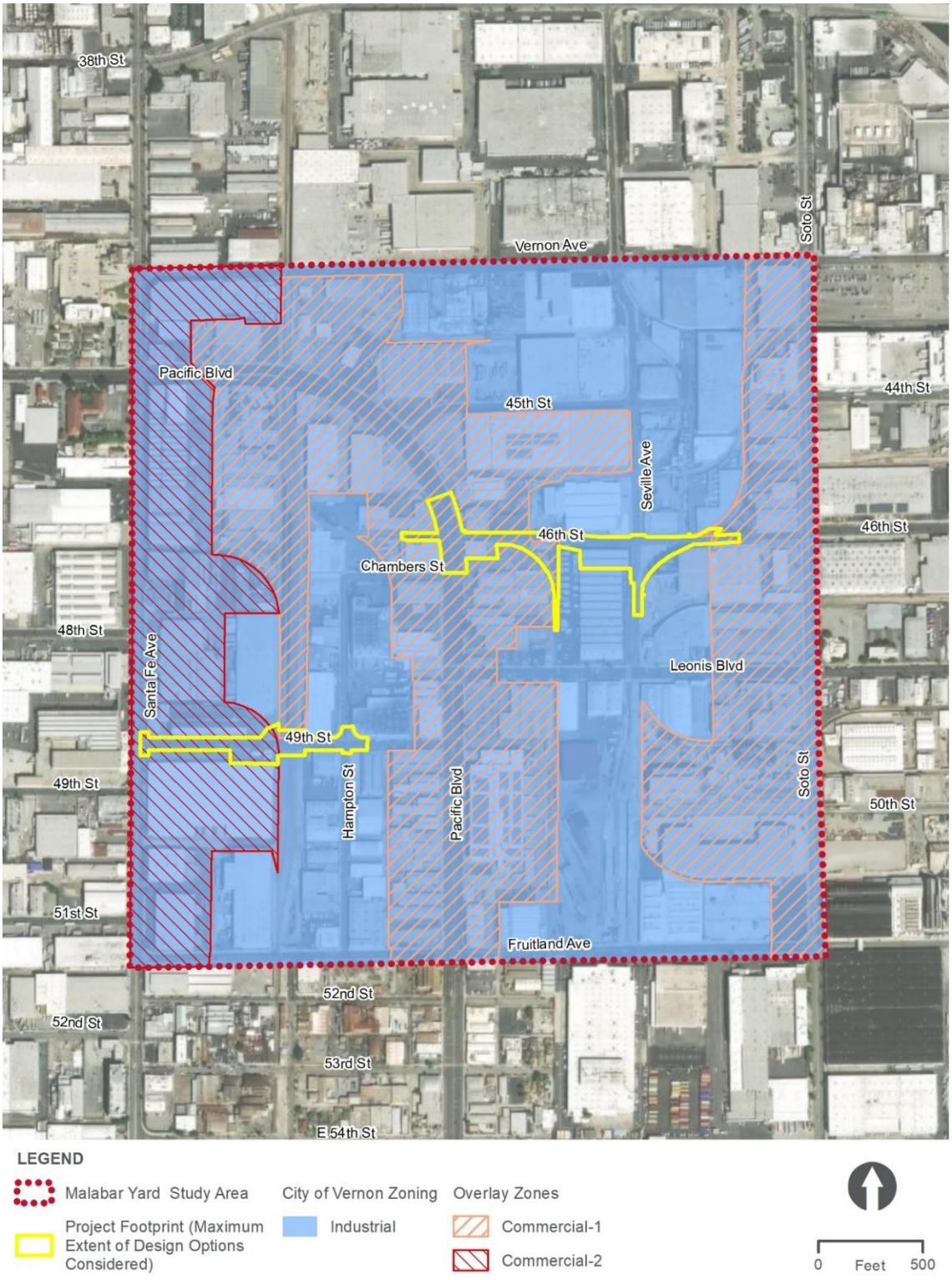
Figure 3.2-2 Zoning Designations within the Malabar Yard Study Area



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3.2.4 Environmental Consequences

No Action Evaluation

The following topics were evaluated to determine potential effects if the Malabar Yard railroad improvements in the City of Vernon were not implemented in conjunction with the Build Alternative:

Alteration of Land Use Patterns

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects would occur because existing land use patterns within the Malabar Yard study area would remain the same as no property acquisitions would occur and no private properties would be converted to a transportation land use.

Compatibility with Existing or Planned Land Uses

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects would occur because existing and planned land uses within the Malabar Yard study area would remain the same and no access restrictions would occur during construction or operation.

Physical Division of an Established Community

If the Malabar Yard railroad improvements were not implemented, no physical division of an established community would occur, and no direct or indirect effects would occur. The intersection of 49th Street with Malabar Yard would remain in its current configuration.

Conflict with Land Use Plans, Policies, or Local Land Use Controls

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects would occur because no actions that would conflict with land use plans, policies, or local land use controls would occur.

Evaluation of Malabar Yard Railroad Improvements

TOPICS 3.2-A	Alteration of land use patterns

Direct Effects – Construction

As identified in Table 2-4 of this document, temporary construction easements (TCE) will be required during construction of any combination of design options for the Malabar Yard railroad improvements for property access and parking, driveway modifications, and to install signs. Right-of-way (ROW) impacts are shown in the engineering plans provided as Appendices A and B to this document. TCEs on parcels would be restored to their existing condition or better after completion of construction. No adverse direct effect would occur.

Direct Effects – Operations

The Malabar Yard railroad improvements would be constructed mostly within the existing railroad ROW in an urbanized environment with a heavy presence of existing transportation infrastructure and industrial land uses. The evaluation below addresses the potential for land use alterations that may occur from implementation of the Malabar Yard railroad improvements.

49th Street Closure

Design Option 1

Design Option 1 for the 49th Street Closure involves construction of a new offset cul-de-sac on 49th Street west of the BNSF Malabar Yard and installation of bollards on the east side of 49th Street. The 49th Street Closure is a change to the circulation network but would not introduce new land uses to the Malabar Yard study area.

A portion of one property (APN: 6308-011-010) would be permanently incorporated into the public road ROW to accommodate a turning radius for semi-trucks to make a full turn at the end of the proposed offset cul-de-sac (Figure 3.2-3). This design option results in loss of a portion of the street parking that currently exists on the south side of 49th Street (west of Malabar Yard) and on both sides of 49th Street (east of Malabar Yard) to Hampton Street. Design Option 1 for the 49th Street Closure would also require potential modification to 11 parking spaces on one privately owned property (Assessor Parcel Number [APN]: 6308-011-010), modified access and connectivity to surrounding properties, and alterations to existing circulation patterns; however, the physical modifications would not alter existing land use patterns. A Metro-owned parcel (APN 6308-011-901) would be permanently converted for the proposed offset cul-de-sac. However, this Metro-owned parcel is already used for transportation purposes and would not alter existing land use patterns.

The conversion of industrial-zoned property to transportation use to support implementation of Design Option 1 for the 49th Street Closure may require the City of Vernon to change General Plan land use designations and zoning classifications to reflect the proposed transportation uses. Although existing land uses would be altered, no direct adverse effects would occur because the property would still be usable after implementation of the railroad improvements at this location and the potential land use entitlements mentioned above are administrative procedures that would support the continuation of movement of goods and people along roadways and railways in the city.

Figure 3.2-3. Property Impacts at 4900 Santa Fe Avenue (APN: 6308-011-010) – 49th Street Closure Design Option 1

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Figure 3.2-4. Property Impacts at 4900 Santa Fe Avenue (APN 6308-011-010) – 49th Street Closure Design Option 2

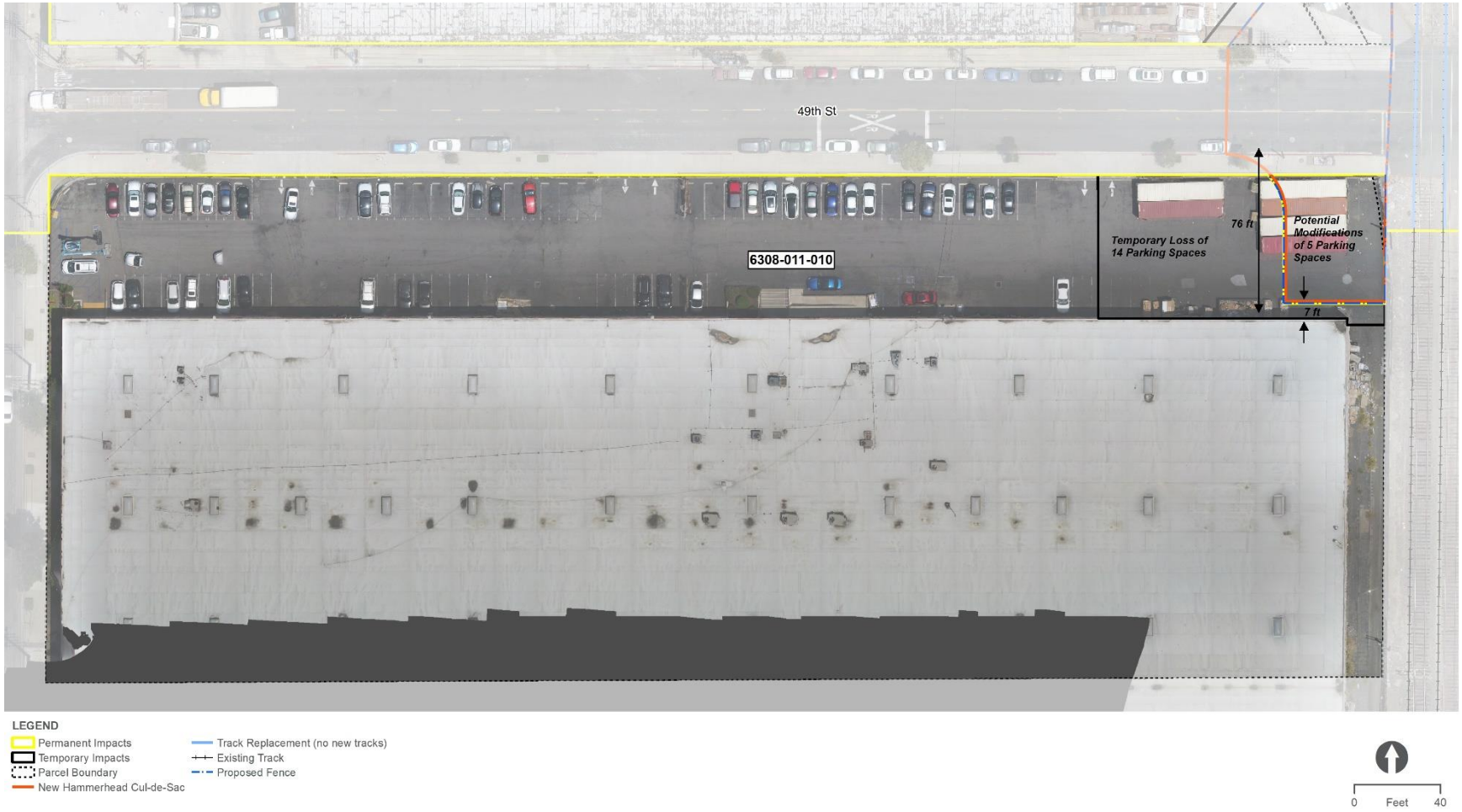

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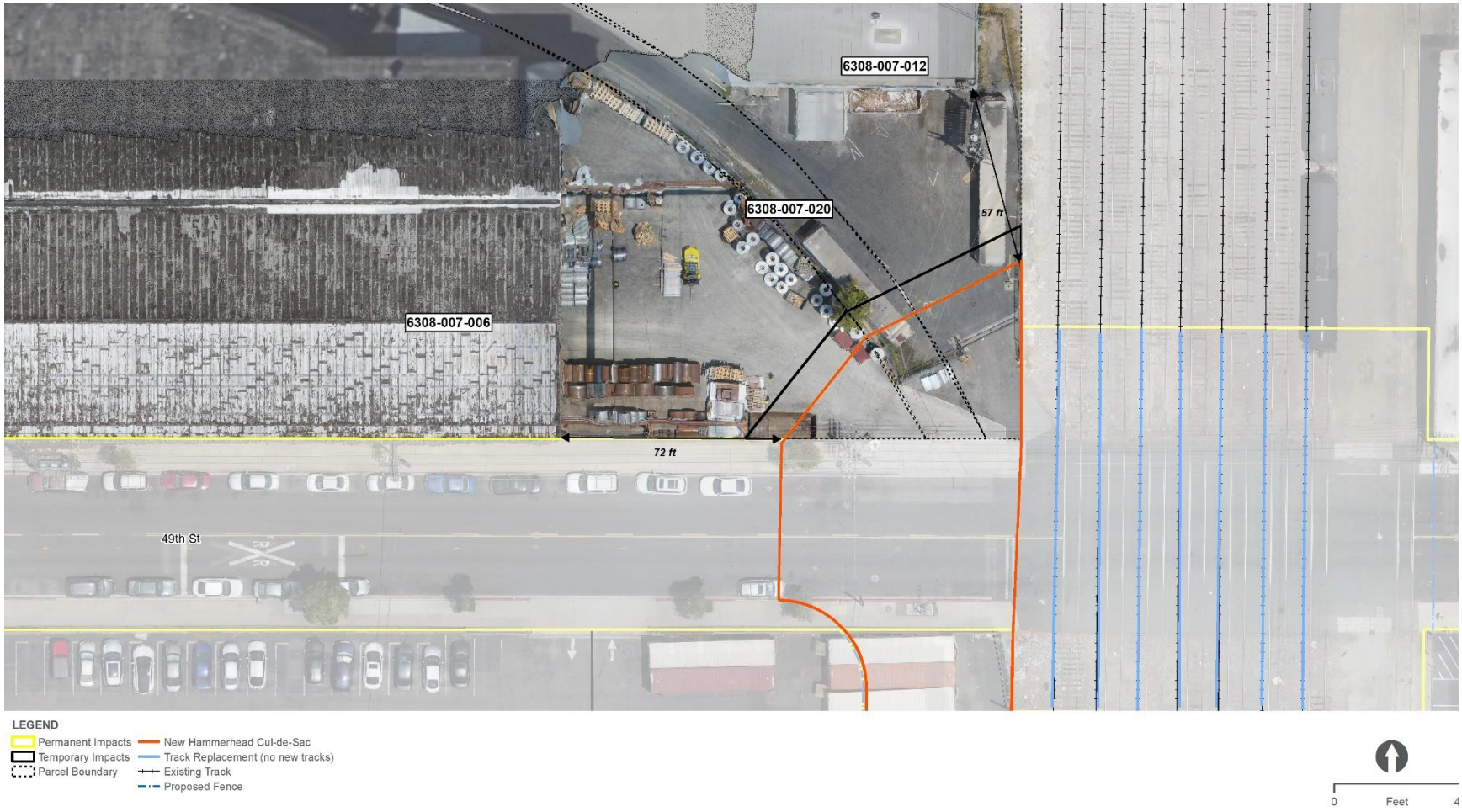
Figure 3.2-5. Property Impacts at 4824 to 4848 Santa Fe Avenue (APNs 6308-007-006, 6308-007-012, 6308-007-020) - 49th Street Closure Design Option 2



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Design Option 2

Design Option 2 would facilitate turning movements on 49th Street in a hammerhead configuration east of Santa Fe Street. A portion of four properties (APNs 6308-011-010, 6308-007-006, 6308-007-012, and 6308-007-020) would be permanently incorporated into the public road ROW to accommodate a turning radius for semi-trucks to make a full turn at the end of the proposed hammerhead cul-de-sac (Figure 3.2-4 and Figure 3.2-5). Similar to Design Option 1, loss of parking on privately owned property, APN 6308-011-010, would still occur, along with modified access and connectivity to surrounding properties, and alterations to existing circulation patterns; however, the physical modifications would not alter existing land use patterns. A Metro-owned parcel (APN 6308-011-901) would be permanently converted for the proposed hammerhead cul-de-sac. However, this Metro-owned parcel is already used for transportation purposes and would not alter existing land use patterns.

The conversion of industrial zoned property to transportation use to support implementation of Design Option 2 for the 49th Street Closure may require the City of Vernon to change General Plan land use designations and zoning classifications to reflect the proposed transportation uses. Although existing land uses would be altered, no direct adverse effects would occur because the properties would still be usable after implementation of the railroad improvements at this location and the potential land use entitlements mentioned above are administrative procedures that would support the continuation of movement of goods and people along roadways and railways in the city.

46th Street Connector

Design Option 1

Design Option 1 for the 46th Street Connector would include a new 1,000-foot track connection from Pacific Boulevard to Seville Avenue, on portions of privately owned properties just south of the 46th Street ROW.

Design Option 1 for the 46th Street Connector would convert a portion of industrial-zoned property to a railroad ROW (transportation use), thereby altering the existing land uses along the south side of 46th Street. Design Option 1 would also require full and partial demolition of three buildings with existing businesses (industrial/manufacturing uses) to accommodate establishment of the new railroad ROW:

- Full demolition of building at 4600 Pacific Boulevard (APN 6308-004-011, Figure 3.2-6):
  - *Business Name and Type:* At the time this document was being prepared, the property was closed and appeared vacant. Lease information was posted outside with contact number.
- Full demolition of building at 4618 Pacific Boulevard (APN 6308-004-012, Figure 3.2-7):
  - *Business Name:* Flores Design Fine Furniture, Inc.
  - *Business Type:* Furniture design and manufacturing.

  - *Driveway Impacts:* The existing driveway on the northeast corner of 46th Street would be modified, the existing driveway on the northwest corner of 46th Street would be closed, and temporary loss of 3 parking spaces would be required.

- Partial demolition of building at 2665 Leonis Boulevard (APN 6308-004-013, Figure 3.2-8):
  - *Business Name:* Arcadia Leonis.
  - *Business Type:* Window and door manufacturing.
  - *Driveway Impacts:* The existing driveway on the northeast corner of 46th Street would be modified, the existing driveways on northwest and northeast corners of 46th Street would be closed, and a new driveway along Seville Avenue is proposed.

The conversion of a portion of industrial-zoned property to transportation use to support implementation of Design Option 1 for the 46th Street Connector may require the City of Vernon to change General Plan land use designations and zoning classifications to reflect the proposed transportation uses. Although existing land uses would be altered, no direct adverse effects would occur because the properties would still be usable after implementation of the railroad improvements at this location and the potential land use entitlements mentioned above are administrative procedures that would support the continuation of movement of goods and people along roadways and railways in the city.

Design Option 2

Compared to Design Option 1, Design Option 2 for the 46th Street Connector would shift the 1,000-foot track alignment between Pacific Boulevard and Seville Avenue slightly north into the 46th Street ROW. This design option would affect fewer privately owned parcels and driveways on the south side of 46th Street and require less building demolition to facilitate the new track alignment.

Design Option 2 would require full demolition of one building on one parcel and partial demolition of a fence and parking on one parcel to accommodate establishment of the new railroad ROW:

- Full demolition of building at 4600 Pacific Boulevard (APN 6308-004-011, Figure 3.2-9):
  - *Business Name and Type:* At the time this document was being prepared, the property was closed and appeared vacant. Lease information was posted outside with contact number.
- Partial demolition of existing fence and removal of parking at 4618 Pacific Boulevard (APN 6308-004-012, Figure 3.2-10):
  - *Business Name:* Flores Design Fine Furniture, Inc.
  - *Business Type:* Furniture design and manufacturing.
  - *Driveway Impacts:* The existing driveways on northeast and northwest corner of 46th Street would be modified and temporary loss of 3 parking spaces would be required.

Similar to Design Option 1 for the 46th Street Connector, the building at 4600 Pacific Boulevard would require full demolition. With Design Option 2, the building at 4618 Pacific Boulevard would not require full demolition, as only a portion of the fence and parking on the east side of the property would be affected, and the building at 2665 Leonis Boulevard would not be partially demolished (Figure 3.2-11). Driveway modifications would still be required at both properties.

The conversion of industrial zoned property to transportation use to support implementation of Design Option 2 for the 46th Street Connector may require the City of Vernon to change the General Plan land use designations and zoning classifications to reflect the proposed transportation uses. Although existing land uses would be altered, no direct adverse effects would occur because the properties would still be usable after implementation of the railroad improvements at this location and the potential land use entitlements mentioned above are administrative procedures that would support the continuation of movement of goods and people along roadways and railways in the city.

Indirect Effects – Construction and Operations

Future redevelopment in the Malabar Yard study area would not be precluded following construction of any combination of design options for the Malabar Yard railroad improvements. Neighboring properties on both sides of Malabar Yard at 49th Street would be accessed differently with the 49th Street Closure, although no changes to the use of property would occur. Along 46th Street, a new portion of railroad ROW would be established with no change to other adjacent properties. Unused space within the Project footprint for the design options considered could be maintained under private ownership (with access thereto). No indirect adverse effect would occur during construction and operation.

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Figure 3.2-6. Property Impacts at 4600 Pacific Boulevard (APN 6308-004-011) – 46th Street Connector Design Option 1

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Figure 3.2-7. Property Impacts at 4618 Pacific Boulevard (APN 6308-004-012) - 46th Street Connector Design Option 1

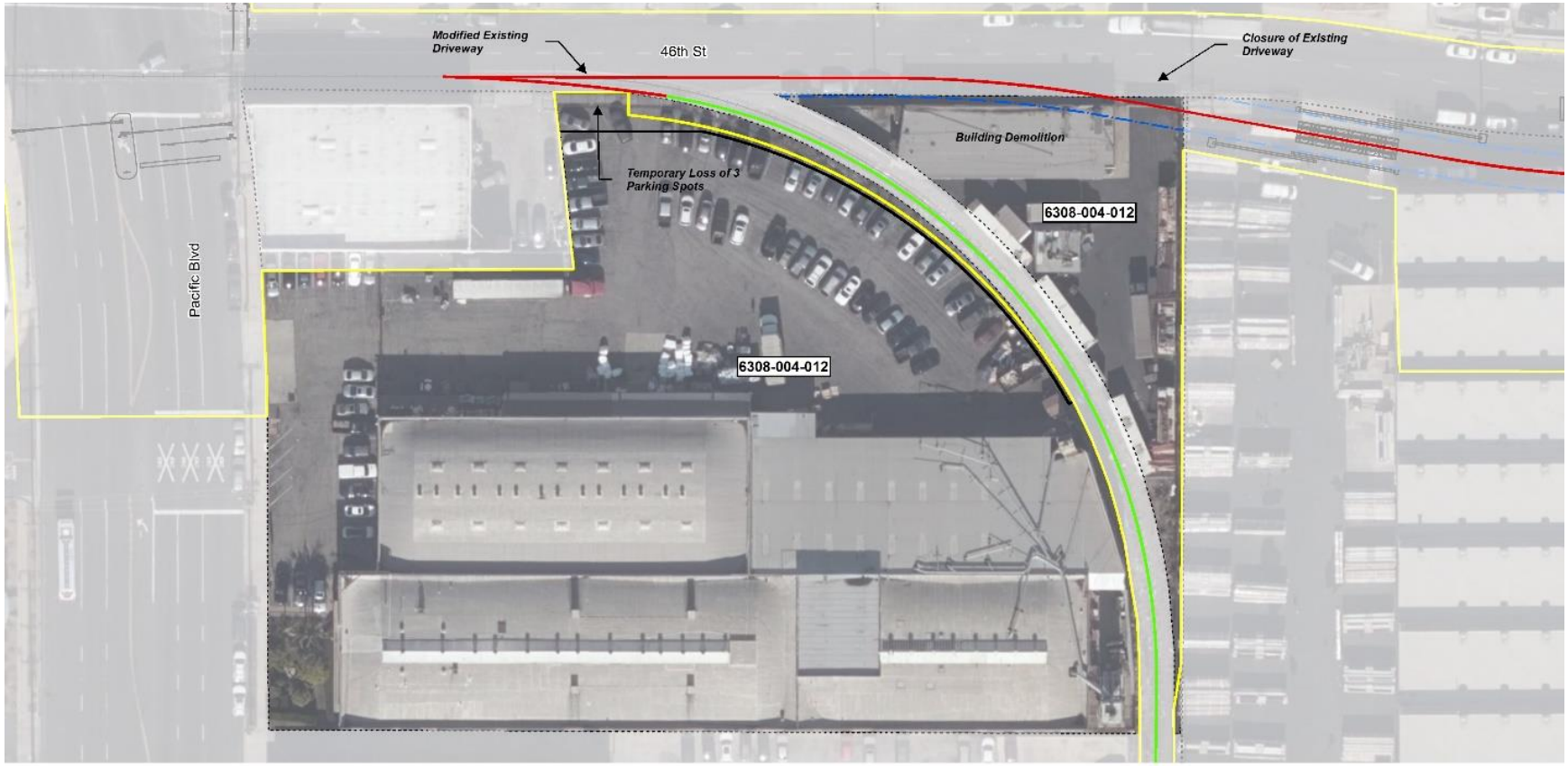

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Figure 3.2-8. Property Impacts at 2665 Leonis Boulevard (APN 6308-004-013) – 46th Street Connector Design Option 1

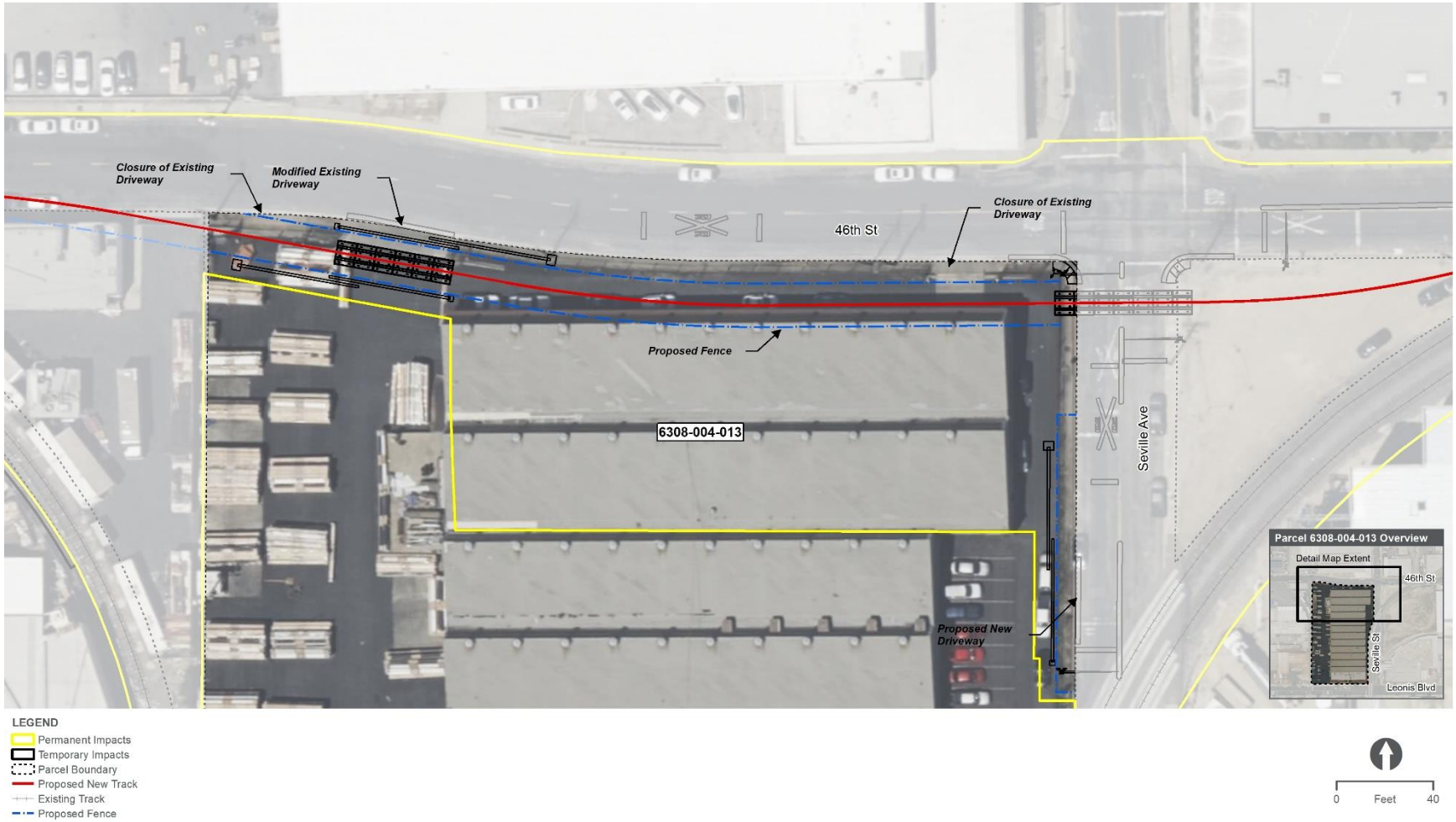

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Figure 3.2-9. Property Impacts at 4600 Pacific Boulevard (APN 6308-004-011) – 46th Street Connector Design Option 2

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Figure 3.2-10. Property Impacts at 4618 Pacific Boulevard (APN 6308-004-012) – 46th Street Connector Design Option 2

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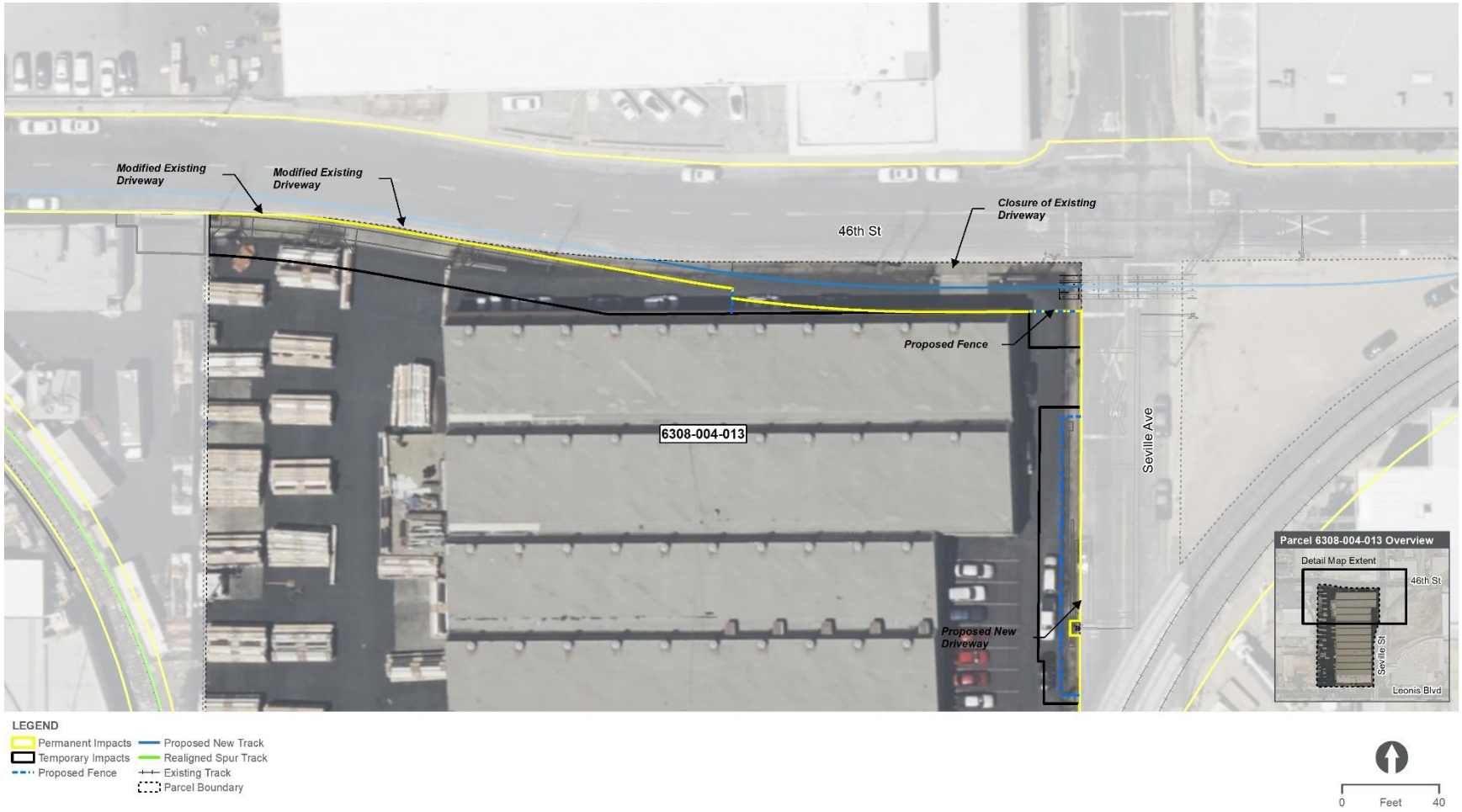
Figure 3.2-11. Property Impacts at 2665 Leonis Boulevard (APN 6308-004-013) – 46th Street Connector Design Option 2



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TOPIC 3.2-B	Compatibility with existing or planned land uses

Direct Effects – Construction

Construction activities for any combination of design options for the Malabar Yard railroad improvements would result in temporary access disruptions to existing businesses, which could change the travel path to businesses by customers and delivery vehicles during construction. This temporary disruption in existing traffic circulation could result in land use incompatibilities from access restrictions to nearby businesses when road closures are required and, therefore, would be considered an adverse effect. Implementation of Malabar Yard Mitigation Measure TR-1 would require a construction Traffic Management Plan (TMP), which would minimize access restrictions to nearby businesses when road closures are required, thereby reducing the potential for temporary land use incompatibility during construction. Upon implementation of Malabar Yard Mitigation Measure TR-1, temporary land use incompatibilities would be minimized, and no direct adverse effect would occur during construction.

Direct Effects – Operations

Any combination of design options for the Malabar Yard railroad improvements would be constructed mostly within the existing railroad ROW in an urbanized environment with a heavy presence of existing transportation infrastructure and industrial land uses. The proposed Malabar Yard railroad improvements are transportation-related uses and would be compatible with land uses due to the presence of already-existing transportation infrastructure. No direct adverse effect would occur during operation.

Indirect Effects – Construction and Operations

Any combination of design options for the Malabar Yard railroad improvements would result in temporary indirect effects on adjacent land uses due to temporary increases in noise levels, dust, and access disruptions related to construction activities and road closures. Any combination of design options for the Malabar Yard railroad improvements could result in decreased parking availability and reduced setbacks; however, the allowable pre-existing nonconformance with the zoning code would not change with construction of the railroad improvements. Long-term access to adjacent properties would be maintained in coordination with the City of Vernon and nearby business and/or property owners. No indirect adverse effect would occur.

TOPICS 3.2-C	Physical division of an established community

Direct Effects – Construction

Any combination of design options for the Malabar Yard railroad improvements would be constructed mostly within the existing railroad ROW in an urbanized environment with a heavy presence of existing transportation infrastructure and industrial land uses. There are no established communities within or adjacent to the Project footprint for the design options considered. Although construction of the Malabar Yard railroad improvements would require

roadway detours, staging areas, and lane blockages within the limits of the Project footprint, it would not divide any established community during that time. No direct adverse effect would occur during construction.

Direct Effects – Operations

Although either design option for the 49th Street Closure would create a physical barrier within the area, the street closure is located in a primarily industrial area adjacent to Malabar Yard with no residential uses or established communities in the vicinity. Access that currently provides connectivity to travelers on both sides of Malabar Yard would be maintained along adjacent parallel roadways including Fruitland Avenue and Pacific Boulevard. The 49th Street Closure would not physically divide an established community.

At 46th Street, grade crossing modifications would occur under either design option at 46th Street and Pacific Boulevard, 46th Street and Seville Avenue, and 46th Street south of Seville Avenue. These grade crossings would facilitate safe pedestrian, bicycle, and vehicular access and connectivity and would not inhibit access to surrounding properties. The 46th Street Connector would not physically divide an established community. Therefore, no direct adverse effect would occur during operation.

Indirect Effects – Construction and Operations

Due to the existing urbanized nature and presence of existing transportation infrastructure in the Malabar Yard study area, any combination of design options for the Malabar Yard railroad improvements are not expected to induce growth or interrupt circulation or access in a manner that would create a physical or perceived division within the community. No indirect adverse effect would occur.

TOPIC 3.2-D	Conflict with land use plans, policies, or local land use controls

Direct Effects – Construction

Any combination of design options for the Malabar Yard railroad improvements would be constructed mostly within existing railroad ROW in an urbanized environment generally characterized by industrial land uses. Construction would be conducted in accordance with all applicable policies and regulations of agencies with jurisdiction or discretion over the Malabar Yard railroad improvements and/or site conditions. Therefore, no direct adverse effect would occur during construction.

Direct Effects – Operations

As identified in Table 2-4, the proposed Malabar Yard railroad improvements would affect 14 industrial-zoned parcels, 13 of which are outside the railroad or public ROW, and one that is a Metro-owned property. However, not all parcels would experience changes to setbacks or modified parking configurations. Each of the design options considered at 49th Street and 46th Street would affect parcels differently. As discussed below, the parking, loading, and setback

characteristics of the industrial-zoned parcels were evaluated to determine if modifications to setbacks or parking space availability would occur or if railroad improvements would conflict with the City of Vernon's Comprehensive Zoning Ordinance (updated in 2008 and most recently amended in 2017). The affected parcels' compliance with current zoning regulations under existing conditions and future conditions with the railroad improvements were considered as part of the evaluation.

49th Street Closure

Design Option 1

Design Option 1 for the 49th Street Closure would result in conversion of a portion of one industrial-zoned property (total of 0.12 acres) and modified building setbacks from the property line with reduced parking spaces available to the current business (industrial/manufacturing use).

- **4900 Santa Fe Avenue (APN 6308-011-010):**
  - *Business Name*: Crystal Art Gallery.
  - *Business Type:* Production and distribution of framed art and home décor.
  - Constructed in 1973, the building on this parcel was built to zoning standards at time of construction. The lot is 3.34 acres.
  - *Parking and Setbacks:* The offset cul-de-sac would result in the permanent loss of 11 parking spaces, reduction in building setback to the northern property line from 76 feet to 10 feet, and removal of an existing fence and barrier wall (Figure 3.2-3). Temporary construction effects would result in the temporary loss of an additional 22 spaces.
  - *Partial Acquisition:* Total land use acreage converted to road ROW would be 0.12 acre.

Upon implementation of Design Option 1 for the 49th Street Closure, there would be less than the required 21-foot setback specified in the City of Vernon's Comprehensive Zoning Ordinance. Based on a review of aerial imagery, the parcel may currently be out of compliance relating to parking requirements, as the parcel is required to provide 196 parking spaces, but currently provides only 146 spaces. This parcel meets the definition of Legal Nonconforming Building or Standards as defined by the City of Vernon's 2017 Comprehensive Zoning Ordinance Section 26.5.3 and is not required to meet standards unless certain triggering events[3] occur. The Malabar Yard railroad improvements do not meet the definition of a triggering event. No additional changes to this parcel would occur with regard to zoning. No direct adverse effect would occur.

[3] City of Vernon describes triggering events as: 25 percent of the building being vacant for more than 2 years, increase in the Floor Area of a building that does not constitute new construction or a major alteration or repair, change of use to a category that has greater parking/maneuvering, or loading requirement, minor alterations or repairs, new construction or major alteration or repair that is voluntary, major alteration or repair that is due to force majeure.

Design Option 2

The closure of 49th Street in a hammerhead cul-de-sac configuration would result in conversion of a portion of four industrial-zoned properties and modified building setbacks and reduced parking spaces for current businesses (industrial/manufacturing uses) on three parcels. One parcel (APN 6308-007-020) is used as a driveway and no changes to setbacks or parking spaces would occur. A total of 0.09 acre would be converted to road ROW with Design Option 2.

- **4900 Santa Fe Avenue (APN 6308-011-010):**
  - *Business Name*: Crystal Art Gallery.
  - *Business Type:* Production and distribution of framed art and home décor.
  - *Parking and Setbacks:* The hammerhead cul-de-sac configuration would result in the permanent loss of 5 parking spaces, reduction in building setback to the southern property line from 76 feet to 7 feet, and removal of an existing fence and barrier wall (Figure 3.2-4). Temporary construction effects would result in the temporary loss of an additional 14 spaces.
  - *Partial Acquisition:* Total land use acreage converted to road ROW would be 0.05 acre.
- **4848 Santa Fe Avenue (APN 6308-007-006):**
  - *Business Name*: Consolidated Fabricators.
  - *Business Type:* Steel fabricator.
  - Constructed in 1946, the building on this parcel was built to zoning standards at the time of construction. The lot is 1.83 acres.
  - *Parking and Setbacks:* The hammerhead cul-de-sac configuration would result in no loss of parking spaces. The building would be set back 72 feet from the new property line with a hammerhead cul-de-sac (Figure 3.2-5).
  - *Partial Acquisition:* Total land use acreage converted to road ROW would be less than 0.01 acre (197 square feet).
- **4824 Santa Fe Avenue (APN 6308-007-012):**
  - *Business Name*: Paper Source Converting and Manufacturing.
  - *Business Type:* Paper Products.
  - Constructed in 1965, the building on this parcel was built to zoning standards at the time of construction. The lot is 2.94 acres.
  - *Parking and Setbacks:* The hammerhead cul-de-sac configuration would result in no loss of parking spaces. The building would be set back 57 feet from the new property line with a hammerhead cul-de-sac (Figure 3.2-5).
  - *Partial Acquisition:* Total land use acreage converted to road ROW would be 0.02 acre.

- **4800 Santa Fe Avenue (APN 6308-007-020):**
  - *Business Name*: Paper Source Converting and Manufacturing.
  - *Business Type:* Paper Products.
  - The parcel is currently used as a driveway to access adjacent parcels. The lot is 0.27 acre.
  - *Partial Acquisition:* Total land use acreage converted to road ROW would be 0.01 acre.

Similar to Design Option 1, the building setbacks for APN 6308-011-010 would be less than the required 21 feet; however, the parcel is currently out of compliance and meets the definition of Legal Nonconforming Building or Standards. The other three parcels would not experience changes to available parking spaces and setbacks are consistent with existing zoning ordinances. There would be no additional impacts with regard to zoning. No direct adverse effect would occur.

46th Street Connector

Design Option 1

Design Option 1 for the 46th Street Connector would convert portions of four industrial-zoned properties to road or railroad ROW and would result in modified setbacks and/or reduced parking spaces available to the current businesses (industrial/manufacturing uses) on these properties. A total of 1.73 acres would be converted to railroad ROW with Design Option 1.

- **4600 Pacific Boulevard (APN 6308-004-011):**
  - *Business Name and Type:* At the time this document was being prepared, the property was closed and appeared vacant. Lease information was posted outside with contact number.
  - Constructed in 1946, the building on this parcel was built to zoning standards at the time of construction. The lot is 0.29 acre.
  - *Parking and Setbacks:* The southern alignment for the 46th Street Connector would result in full demolition of the building on site (Figure 3.2-7).
  - *Full Acquisition:* Total land use acreage converted to railroad ROW would be up to 0.29 acre.
- **4618 Pacific Boulevard (APN 6308-004-012):**
  - *Business Name:* Flores Design Fine Furniture, Inc.
  - *Business Type:* Furniture design and manufacturing.
  - Constructed in 1947, the building on this parcel was built to zoning standards at the time of construction. The lot is 2.66 acres.
  - *Parking and Setbacks:* The southern alignment for the 46th Street Connector would require the demolition of an approximately 21,000-square foot building along 46th

Street, demolition of a fence, replacement of fencing along the spur track, and temporary loss of 3 parking spaces (Figure 3.2-7).

- *Partial Acquisition:* Total land use acreage converted to road or railroad ROW would be 0.48 acre.

- **2665 Leonis Boulevard (APN 6308-004-013):**
  - *Business Name:* Arcadia Leonis.
  - *Business Type:* Window and door manufacturing.
  - Constructed in 1941, the building on this parcel was built to zoning standards at the time of construction. The lot is 4.58 acres.
  - *Parking and Setbacks:* The southern alignment for the 46th Street Connector would result in the demolition of approximately 22,600 square feet of the existing warehouse and refacing of the remaining portion of the warehouse. The railroad improvements would be configured in a manner to maintain zoning code compliance related to a 21-foot setback from building frontage to curb face for industrial buildings. Improvements would include modification to an existing driveway, closure of an existing driveway, construction of a new driveway, and installation of fencing. These improvements would be configured so all applicable zoning requirements could be fulfilled (Figure 3.2-8).
  - *Partial Acquisition:* Total land use acreage converted to railroad ROW would be 0.77 acre.
- **No Address Identified (APN 6308-002-017):**
  - *Business Name and Type:* At the time this document was being prepared, the property was vacant.
  - The lot is 0.19 acre.
  - Full Acquisition: Total land use acreage converted to railroad ROW would be 0.19 acre.

Implementation of Design Option 1 would require full acquisition of 4600 Pacific Boulevard and, therefore, a consistency analysis with the zoning ordinance for industrial buildings was not performed. The railroad improvements at 4618 Pacific Boulevard would not result in changes to the existing setbacks or result in the permanent loss of parking spaces. The railroad improvements at 2665 Leonis Boulevard would be configured to maintain the required 21-foot setback in the City of Vernon's Comprehensive Zoning Ordinance. Under Design Option 1, no parcels would be out of compliance with the zoning code following implementation of the railroad improvements and there would be no additional impacts with regard to zoning. No direct adverse effect would occur.

Design Option 2

Similar to Design Option 1 for the 46th Street Connector, under Design Option 2, existing land uses would be converted from industrial to road or railroad ROW and would result in modified setbacks and/or reduced parking spaces available to the current businesses (industrial/ manufacturing uses) on these properties. APN 6308-002-017 is currently vacant and there would be no changes to setbacks or parking spaces. A total of 0.55 acre would be converted to railroad ROW with Design Option 2.

- **4600 Pacific Boulevard (APN 6308-004-011):**
  - *Business Name and Type:* At the time this document was being prepared, the property was closed and appeared vacant. Lease information was posted outside with contact number.
  - *Parking and Setbacks:* The northern alignment for the 46th Street Connector would result in the full demolition of the building on site (Figure 3.2-9).
  - *Full Acquisition:* Total land use acreage converted to railroad ROW would be up to 0.29 acre.
- **4618 Pacific Boulevard (APN 6308-004-012):**
  - *Business Name:* Flores Design Fine Furniture, Inc.
  - *Business Type:* Furniture design and manufacturing.
  - The northern alignment for the 46th Street Connector would require demolition of a fence, driveway modification, replacement of fencing along the spur track, and temporary loss of 3 parking spaces (Figure 3.2-10).
  - *Partial Acquisition:* Total land use acreage converted to road or railroad ROW would be 0.07 acre.
- **2665 Leonis Boulevard (APN 6308-004-013):**
  - *Business Name:* Arcadia Leonis.
  - *Business Type:* Window and door manufacturing.
  - The northern alignment for the 46th Street Connector would result in modification to two existing driveways, closure of one existing driveway, construction of a new driveway, and installation of fencing. These improvements would be located so the remaining portions of the property meet applicable zoning requirements (Figure 3.2-9).
  - *Partial Acquisition:* Total land use acreage converted to railroad ROW would be 0.14 acre.
- **No Address Identified (APN 6308-002-017):**
  - *Business Name and Type:* At the time this document was being prepared, the property was vacant.

- The lot is 0.19 acre.
- *Full Acquisition:* Total land use acreage converted to railroad ROW would be 0.19 acre.

Implementation of Design Option 2 would require full acquisition of 4600 Pacific Boulevard and, therefore, consistency with the zoning ordinance for industrial buildings is no longer required. The railroad improvements at 4618 Pacific Boulevard would not result in permanent changes to the existing setbacks or result in the permanent loss of parking spaces.

The railroad improvements at 2665 Leonis Boulevard would result in setbacks less than the required 21 feet. Based on aerial imagery, the parcel may currently be out of compliance relating to parking requirements, as the parcel is required to provide 113 parking spaces, but currently provides only 81 spaces. The parcel meets the definition of Legal Nonconforming Building or Standards as defined by the City of Vernon's 2017 Comprehensive Zoning Ordinance Section 26.5.3 and is not required to meet standards unless certain triggering events occur. The railroad improvements do not meet the definition of a triggering event. This parcel would continue to be out of compliance with the Zoning Ordinance following implementation of the railroad improvements; however, this would be consistent with the existing condition and there would be no additional impacts with regard to zoning. No direct adverse effect would occur.

Table 3.2-2 provides an evaluation of the railroad improvement's consistency with applicable plans, policies, and programs, which is required under 40 CFR 1502.16(c).

Table 3.2-2. Consistency with Applicable Plans, Policies, and Local Land Use Controls

Policy/Goal	Malabar Yard Railroad Improvements
Federal	
Partnership for Sustainable Communities Livability Principles	
Principle 1. Provide more transportation choices. Develop safe, reliable and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions and promote public health.	**Consistent.** Any combination of design options for the Malabar Yard railroad improvements would provide for efficient rail service that minimizes impacts on the local street system.
National Freight Strategic Plan (2020)	
Goal 1. Safety: Improve the safety, security, and resilience of the national freight system. Goal 2. Infrastructure: Modernize freight infrastructure and operations to grow the economy, increase competitiveness, and improve quality of life. Strategic objectives:	**Consistent.** Implementation of any combination of design options would support physical railroad improvements and operational modifications capable of maintaining BNSF's operations and preserving the current levels of freight rail operations and regional goods movement. The Malabar Yard railroad improvements would increase operational efficiency for BNSF because

Table 3.2-2. Consistency with Applicable Plans, Policies, and Local Land Use Controls

Policy/Goal	Malabar Yard Railroad Improvements
• Reduce conflicts between passenger and freight traffic • Prioritize projects that improve freight intermodal connectivity, and enhance freight flows on first- and last-mile connectors and at major trade gateways	merchant train traffic would be redistributed from the north entrance of Malabar Yard to the east entrance (using the new 46th Street Connector) to and from Los Angeles Junction, thereby eliminating the need to operate on the same tracks as passenger trains on the heavily congested San Bernardino Subdivision.
FRA, Track Safety Standards, 119 Federal Register 33992 – 34056 (1998)	
The *Federal Railroad Administration's Track Safety Standards* outline minimum safety requirements for railroad track that is part of the general railroad system of transportation.	**Consistent.** All Malabar Yard railroad improvements would be designed and constructed to comply with FRA standards and specifications to maximize safety for both motorized and non-motorized forms of transportation. Safety improvements at identified at-grade crossing locations would be implemented to minimize potential safety concerns between motor vehicles, pedestrians, bicyclists, and freight trains.
State	
California Transportation Plan 2050 (2021)	
Goal 1: Safety. Provide a safe and secure transportation system. Goal 8. Infrastructure. Maintain a high-quality, resilient transportation system.	**Consistent.** Implementation of any combination of design options would support physical railroad improvements and operational modifications capable of maintaining BNSF's operations and preserving the current levels of freight rail operations and regional goods movement. All Malabar Yard railroad improvements would be designed and constructed to comply with FRA and CPUC standards and specifications to maximize safety for both motorized and non-motorized forms of transportation. Safety improvements at identified at-grade crossing locations would be implemented to minimize potential safety concerns between motor vehicles, pedestrians, bicyclists, and freight trains.
Smart Mobility Framework (2010)	
Smart Mobility Principles: Reliable Mobility. Manage, reduce, and avoid congestion by emphasizing multimodal options and network management through operational improvements and other strategies. Provide predictability and capacity increases focused on travel that supports economic productivity. Robust Economy. Invest in transportation improvements – including operational improvements – that support the	**Consistent.** As the Malabar Yard railroad improvements are associated with the Link US Project, the railroad improvements would contribute to enhancing rail yard capacity for regional and intercity rail trains, and providing interconnectivity to the planned HSR system, making it an attractive alternative to congested highways.

Table 3.2-2. Consistency with Applicable Plans, Policies, and Local Land Use Controls

Policy/Goal	Malabar Yard Railroad Improvements
economic health of the state and local governments, the competitiveness of California's businesses, and the welfare of California residents.	Design Option 1 at both locations is expected to generate 143 temporary jobs (representing $9.4 million in labor income) during the construction period. It is expected to create $25.6 million in output (including $13.8 million in value added) and $3.3 million in total federal, state, and local tax revenues. Design Option 2 at both locations is expected to generate 151 temporary jobs (representing $9.7 million in labor income) during the construction period. It is expected to create $27.1 million in output (including $14.5 million in value added) and $3.5 million in total federal, state, and local tax revenues. Throughout operations, the Malabar Yard railroad improvements will contribute to and further support efficient goods movements and supports the economic health of the state and local governments and the competitiveness of California's businesses.
California State Rail Plan (2018)	
Goal 1. Improve multimodal mobility and accessibility for all people. Policy 1.2. Invest strategically to optimize system performance. Goal 2. Preserve the multimodal transportation system. Policy 2.1. Apply sustainable preventative maintenance and rehabilitation strategies. Policy 3.2. Enhance freight mobility, reliability, and global competitiveness.	**Consistent.** Implementation of any combination of design options would support physical railroad improvements and operational modifications capable of maintaining BNSF's operations and preserving the current levels of freight rail operations and regional goods movement. The combination of the 49th Street closure and 46th Street connector allows BNSF to store intermodal trainsets at BNSF Malabar Yard, offset the loss of capacity at the BNSF West Bank Yard, and preserve the current levels of freight rail operations and regional goods movement.
Regional	
SCAG 2020-2045 RTP/SCS: Connect SoCal (2020)	
Connect SoCal Goods Movement Technical Report: SCAG supports a world-class, coordinated Southern California goods movement system that accommodates growth in the throughput of freight to the region and nation in ways that support the region's economic vitality, attainment of clean air standards, and quality of life for our communities. Connect SoCal promotes this vision by: • Maintaining the long-term economic competitiveness of the region	**Consistent.** Any combination of design options for the Malabar Yard railroad improvements would provide a new connection between two of BNSF's freight rail yards in the City of Vernon. Implementation of any combination of design options would support physical railroad improvements and operational modifications capable of maintaining BNSF's operations and preserving the current levels of freight rail operations and regional goods movement. Any combination of design options for the Malabar railroad improvements would improve operational

Table 3.2-2. Consistency with Applicable Plans, Policies, and Local Land Use Controls

Policy/Goal	Malabar Yard Railroad Improvements
• Promoting local and regional job creation and retention • Increasing freight and passenger mobility • Improving the safety of goods movement activities Mitigating environmental impacts of goods movement operations	efficiencies and enhance freight and transit access, resulting in improvements to regional transportation.
Los Angeles County Goods Movement Strategic Plan (2021)	
Initiative 3. Southern California Rail Investment Partnership: Improving the region's freight rail network – primarily owned and operated by Class I freight railroad companies Union Pacific Railroad and BNSF Railway. Strategy 3.4. Support regional mobility goals through the improvement of shared use transportation infrastructure.	**Consistent.** Any combination of design options for the Malabar Yard railroad improvements would provide a new connection between two of BNSF's freight rail yards in the City of Vernon. Implementation of any combination of design options would support physical railroad improvements and operational modifications capable of maintaining BNSF's operations and preserving the current levels of freight rail operations and regional goods movement. Any combination of design options for the Malabar railroad improvements would improve operational efficiencies and enhance freight and transit access, resulting in improvements to regional transportation.
Water Quality Control Plan, Los Angeles Region (Basin Plan) (2014)	
The Water Quality Control Plan for the Los Angeles Region prepared by the Los Angeles Regional Water Quality Control Board (Region 4) outlines the regulatory process for the protection of the beneficial uses of all regional waters. According to the Basin Plan, the beneficial uses for surface waters and groundwater established for the Los Angeles Region that includes both Project study areas are: municipal; agricultural supply; industrial service supply; industrial process supply; groundwater recharge; water contact recreation; non-water contact recreation; warm freshwater habitat; and wildlife habitat.	**Consistent.** The Malabar Yard railroad improvements would comply to the regulatory process outlined in the Basin Plan. Construction of any combination of design options could affect the Los Angeles River from runoff due to grading, excavation, and other site preparation activities. Implementation of Malabar Yard Mitigation Measure HWQ-1 requires compliance with the NPDES Program via preparation and implementation of a SWPPP and Malabar Yard Mitigation Measure HAZ-1 includes provisions for soil characterization, proper handling, transport, treatment and disposition of hazardous materials, methods for emergency response, and personnel training would minimize the potential transport of soils and contaminants to stormwater drainage system.
Local	
City of Vernon General Plan (Amended 2015)	
Policy LU-1.1: Designate all properties in Vernon for manufacturing and industrial use and permit other uses	**Consistent.** Any combination of design options for the Malabar Yard railroad improvements would be

Table 3.2-2. Consistency with Applicable Plans, Policies, and Local Land Use Controls

Policy/Goal	Malabar Yard Railroad Improvements
only with a Conditional Use Permit or other discretionary review process. Permit certain uses only in specified Overlay Districts with a Conditional Use Permit or other discretionary review process.	consistent with the surrounding industrial land uses and would not require a Conditional Land Use permit. The Malabar Yard railroad improvements would not result in changes to the existing Industrial Land Use Designation.
Policy LU-1.2: Accommodate, at limited and specific areas of the City, those commercial, service, and retail uses that complement but do not detract from the purposely established industrial character of the City. Limit such uses to the Commercial Overlay District and permit only with a Conditional Use Permit or other discretionary review process.	**Consistent.** Any combination of design options for the Malabar Yard railroad improvements would be constructed mostly within the existing railroad ROW in an urbanized environment with a heavy presence of existing transportation infrastructure and industrial land uses. All infrastructure improvements would be consistent with the existing character within the Malabar Yard study area. As such, the Malabar Yard railroad improvements would complement and not detract from the industrial character of the city.
Policy CI-1.1: Continue to improve the street system to meet the minimum standards contained in the Circulation and Infrastructure Element.	**Consistent.** Either design option for the 49th Street Closure would include removal of an at-grade crossing and the design would be coordinated with the City of Vernon to provide for efficient rail service that minimizes impacts on the local street system. Either design option for the 46th Street Connector would connect two existing rail spurs. Additionally, construction of any combination of design options for the Malabar Yard railroad improvements would be conducted in accordance with all applicable policies and regulations of agencies with jurisdiction or discretion over proposed facilities and/or site conditions. As the Malabar Yard railroad improvements are associated with the Link US Project, the railroad improvements would contribute to enhancing rail yard capacity for regional and intercity rail trains, and providing interconnectivity to the planned HSR system, making it an attractive alternative to congested highways.
Policy CI-1.2: Continue to coordinate with the rail companies to provide for efficient rail service that minimizes impacts on the local street system.	
Policy CI-1.3: Limit rail yards to areas agreed on and consolidate rail spurs where feasible.	
Policy CI-1.5: Continue to pursue grade separation for railroad crossings on designated streets.	
Policy CI-1.6: Encourage the continued improvement of services provided by the Los Angeles County Metropolitan Transit Authority to Vernon and adjacent cities to provide good access from home to job and job to home for persons employed in Vernon.	
Policy CI-1.7: Encourage the use of ride sharing and public transit for persons employed in the City to reduce traffic congestion and the need for off-street parking in the City.	
Policy N-1.2: Review noise impacts when rail corridors are consolidated, and review ways to reduce impacts on adjacent businesses.	**Consistent.** Construction and operation of any combination of design options for Malabar Yard railroad improvements would not result in adverse noise or vibration effects (see Section 3.6, Noise and Vibration).

Table 3.2-2. Consistency with Applicable Plans, Policies, and Local Land Use Controls

Policy/Goal	Malabar Yard Railroad Improvements
City of Vernon Bicycle Master Plan (2017)	
The City of Vernon Bicycle Master Plan identifies Pacific Boulevard as a future Class II bicycle facility, with on-street bicycle lanes.	**Consistent.** The Malabar Yard railroad improvements would be constructed mostly within the existing railroad ROW. The Malabar Yard railroad improvements would not preclude future bicycle lanes on Pacific Boulevard.
Comprehensive Zoning Ordinance of the City of Vernon (Amended 2017)	
The City of Vernon's Comprehensive Zoning Ordinance establishes development rules for the city, carrying out the objectives laid out in the General Plan. The purpose of the City of Vernon Zoning Ordinance is to designate, regulate, and restrict the use, location, and size of buildings, ancillary structures, and land for industrial uses and other permitted purposes and establish performance and development standards in order to protect public health, safety, and welfare. To achieve this, one Industrial Zone within the city and various Overlay Zones have been deemed best suited to carry out these regulations.	**Consistent.** While improvements associated with the Malabar Yard railroad improvements would reduce on- and off-street parking, and may encroach into current setback requirements, the affected parcels meet the Legal Nonconforming Status of Section 26.5.3. The Malabar Yard railroad improvements are not an event that would trigger compliance and therefore the business on affected parcels have the right to continue as nonconforming uses.

Notes:
Basin Plan=Water Quality Control Plan for the Los Angeles Region; CPUC=California Public Utilities Commission; FRA=Federal Railroad Administration; HSR=high-speed rail; Link US=Link Union Station; NPDES=National Pollutant Discharge Elimination System; ROW=right-of-way; RTP=Regional Transportation Plan; RWQCB=Regional Water Quality Control Board; SCAG=Southern California Association of Governments; SCS=Sustainable Communities Strategy; SWPPP=Stormwater Pollution Prevention Plan

As shown in Table 3.2-2, the Malabar Yard railroad improvements are consistent with the City of Vernon's applicable local plans, policies, and programs. No direct adverse effect would occur during operation.

Indirect Effects – Construction and Operations

Any combination of design options for the Malabar Yard railroad improvements would result in temporary indirect effects on adjacent land uses due to temporary increases in noise levels, dust, and access disruptions related to construction activities and road closures. The Malabar Yard railroad improvements could result in decreased parking availability and reduced setbacks; however, the allowable pre-existing nonconformance with the zoning code would not change with construction of the railroad improvements. Long-term access to adjacent properties will be maintained in coordination with the City of Vernon and nearby business and/or property owners. No indirect adverse effect would occur.

3.2.5 Mitigation Measures

The following mitigation measure would minimize potential adverse effects related to land use and planning. Mitigation measures for the Malabar Yard railroad improvements include "MY" in the nomenclature as shown below.

MY TR-1 **Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements.** See Section 3.3, Transportation for details.

3.3 Transportation

This section provides an evaluation of potential effects related to transportation that may result upon implementation of the Malabar Yard railroad improvements.

3.3.1 Regulatory Framework

Table 3.3-1 identifies and summarizes applicable laws, regulations, and plans relative to transportation.

Table 3.3-1. Applicable Laws, Regulations, and Plans for Transportation

Law, Regulation, or Plan	Description
Federal	
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec.14(n)(13),* 64 *Federal Register* 28545-28556 (1999)[1]	The FRA's Environmental Procedures require an assessment of impacts on passenger and freight transportation, by all modes, from local, regional, national, and international perspectives, with a discussion of construction and long-term impacts on vehicular traffic congestion.
Southern California Association of Governments Federal Transportation Improvement Program (2023)	The SCAG FTIP is a federally mandated 4-year program of all surface transportation projects that are planned to receive federal funding or are subject to a federally-required action. The FTIP is a comprehensive listing of transportation projects proposed over a 6-year period. Projects in the FTIP include highway improvements, transit, rail and bus facilities, high-occupancy vehicle lanes, high occupancy toll lanes, signal synchronization, intersection improvements, freeway ramps, non-motorized projects, bicycle, and pedestrian. The Project is listed in the SCAG 2023 FTIP as Project ID #LA0G1051.
State	
Caltrans California Transportation Plan 2050 (2021)	The vision of the California Transportation Plan 2050 is a safe, resilient, and universally accessible transportation system that supports vibrant communities, advances racial and economic justice, and improves public and environmental health.
Caltrans California State Rail Plan: Connecting California (2018)	The California State Rail Plan provides a vision for an integrated rail system for passenger rail and freight rail services. The California State Rail Plan also identifies the investments needed to reach state goals for increased passenger rail service frequency and improved connectivity.

[1] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

Table 3.3-1. Applicable Laws, Regulations, and Plans for Transportation

Law, Regulation, or Plan	Description
California High-Speed Rail Authority 2022 Business Plan: Recovery and Transformation (2022)	The 2022 Business Plan was adopted by the CHSRA Board of Directors in April 2022 and submitted to state legislature in May 2022. The 2022 Business Plan provides an update on what has transpired since COVID-19 and accounts for new opportunities provided by new transportation funding levels established by federal Bipartisan Infrastructure Law and Governor Gavin Newsom's proposed 2022 budget. The 2022 Business Plan serves as a bridge between the 2020 Business Plan and the 2023 Project Update Report.
Regional	
Southern California Association of Government 2020 Regional Transportation Plan/Sustainable Communities Strategy (2020)	The RTP/SCS is a long-range RTP that provides a blueprint to coordinate the regional transportation system by creating a vision for transportation investment throughout the region and identifying regional transportation and land use strategies to address mobility needs and help the region achieve state GHG emission reduction goals. Amendment #2 to the 2020 RTP/SCS: Connect So Cal included the 2023 FTIP, and the Project is listed as #LA0G1051.
Local	
City of Vernon General Plan Circulation and Infrastructure Element (2007)	The Circulation and Infrastructure Element addresses the movement of goods and people along roadways and railways in the City, as well as the distribution of water, wastewater, stormwater, energy, and information through various conduits.
County of Los Angeles Department of Public Works Traffic Impact Analysis Report Guidelines (1997)	The County of Los Angeles Department of Public Works Traffic Impact Analysis Report Guidelines presents guidelines that were used for the traffic analysis of the Malabar Yard railroad improvements. These guidelines outline the LOS methodology, and thresholds used to determine when impacts may occur on intersections and roadway segments. These guidelines are used for cities within the County of Los Angeles which do not have their own traffic impact study guidelines, such as the City of Vernon.

Notes:
CHSRA=California High-Speed Rail; FRA=Federal Railroad Administration; FTIP=Federal Transportation Improvement Program; GHG=greenhouse gas; LOS=Level of Service; RTP=Regional Transportation Plan; SCAG=Southern California Association of Governments; SCS=Sustainable Communities Strategy

3.3.2 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the Malabar Yard railroad improvements would result in:

- Traffic delays that limit the effectiveness of the traffic circulation system;
- Design of existing roadways and intersections causing increased hazards;

- Impacts to emergency access;
- Impacts to public transit, bicycle, or pedestrian facilities; and/or
- Impacts on freight.

Geographic Area Considered

The traffic study area characterizes the affected environment for all intersections and roadway segments (see Section 3.3.3). The geographic area considered to determine potential traffic-related effects is the traffic study area. The Project footprint for the two design options considered at each location (49th Street and 46th Street) was used to determine potential effects for all other topics considered.

Methodology

The traffic analysis for the Malabar Yard railroad improvements was performed in accordance with the *County of Los Angeles Department of Public Works Traffic Impact Analysis Report Guidelines* (January 1997). The traffic analysis methodology, especially the traffic count normalization approach due to the COVID-19 pandemic impacts, was coordinated with and approved by the City of Vernon in August 2020.

Level of Service

Traffic Study Intersections and Roadway Segments

The traffic study area covers all roads and intersections likely to be affected by the Malabar Yard railroad improvements. A total of 10 study area intersections and 11 roadway segments were evaluated for effects along the local transportation network within the traffic study area, utilizing traffic count data for the Existing (2020) condition.[2]

Traffic counts were performed at all 10 intersections, 11 roadway segments, and affected driveway locations by National Data and Surveying Services in August 2020. Additional historical traffic count data was obtained from the City from the year 2015 at some intersections and roadway segments.

The counts conducted included average daily traffic and intersection turn movements during the AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak hours. Counts for vehicle classification, bicyclists, and pedestrians were also performed at the traffic study area intersections.

[2] On September 17, 2020, the Revised NOI was issued to address the Malabar Yard railroad improvements in the City of Vernon; therefore, the baseline year of analysis/existing condition is 2020.

COVID-19 – Traffic Count Normalization

Generally, counts conducted for the intersections and roadway segments are used directly in the traffic analysis to characterize the existing conditions. However, due to the timing of the traffic counts collected in 2020 during the COVID-19 pandemic, the amount of traffic on the streets and intersections was much lower than the normal (non-COVID-19) conditions. Therefore, the collected raw counts were 'normalized' to the traffic levels that existed pre-COVID-19 before they were used in the traffic analysis to characterize the existing conditions. This approach was coordinated with and approved by the City of Vernon prior to performing the traffic analysis. The following step-by-step process was used to normalize raw counts to pre-COVID conditions.

1. The historical count data for the year 2015 were obtained from the City of Vernon. The counts obtained were turning movement counts at four study intersections.
2. The historical count data were then converted to the year 2020 pre-COVID volumes by adding a 1 percent annual growth rate for a period of 5 years.
3. The historical counts were then compared with the raw counts data collected in August 2020 and the reduction in traffic due to the pandemic was calculated for each turning movement, which was then added to a total reduction for each intersection.
4. Per Step 3, the average reduction in traffic due to the pandemic was 40 percent during the AM peak hour and 35 percent during the PM peak hour.
5. To increase the raw counts by 40 percent in the AM peak hour and by 35 percent in the PM peak hour, a COVID factor was developed to normalize the counts data to align them with pre-COVID traffic levels.
6. Per Step 5, the COVID factors developed for the AM peak hour was 1.67 and for the PM peak hour was 1.54. Therefore, the counts in the AM peak hour were increased by a COVID factor of 1.67 and the counts in the PM peak hour were increased by a COVID factor of 1.54.

Therefore, the COVID factors (1.67 for the AM and 1.54 for the PM) were developed to offset the reduction in traffic volumes in recent times due to the COVID-19 pandemic. The raw traffic counts collected during the AM peak hour were increased by a factor of 1.67 and the raw traffic counts collected during the PM peak hour were increased by a factor of 1.54 to be consistent with the traffic levels existing during the pre-pandemic times or normal times. The 'normalized' counts were then used in the traffic analysis for the Existing (2020) condition and were eventually used as baseline volumes for developing the Opening Year (2024), Future Horizon Year (2040), and No-Build volumes.

Traffic Conditions

Traffic-related effects were identified by determining if changes in the operations and performance at the traffic study area intersections and along the roadway segments would occur due to the redistribution of existing localized traffic that may result from the Malabar Yard railroad

improvements. The analysis identifies potential traffic effects on local streets and roadway segments for the following six traffic scenarios (conditions).

1. Existing (2020) Condition.
2. Opening Year (2024) No-Build Condition.
3. Future Horizon Year (2040) No-Build Condition.
4. Construction Year (2024) Condition.
5. Opening Year (2024) Build Condition.
6. Future Horizon Year (2040) Build Condition.

These six traffic scenarios are summarized in Table 3.3-2.

Table 3.3-2. Traffic Scenarios

Traffic Scenario	Description
Existing (2020) Condition	Under the Existing (2020) Condition, the Malabar Yard railroad improvements would not be implemented. The study area intersections and roadway segments are analyzed based on existing roadway geometries. The railroad crossings are analyzed based on the existing train crossing timings and frequency.
Opening Year (2024) No-Build Condition[1]	Under Opening Year (2024) No-Build Condition, the Malabar Yard railroad improvements would not be implemented; however, ambient growth is applied to the existing traffic volumes to develop traffic volumes for the Opening Year (2024) to analyze intersections and roadway segments in this condition. This condition assumes City of Vernon General Plan improvements to roadways in the study area are complete.
Future Horizon Year (2040) No-Build Condition[2]	Under Future Horizon Year (2040) No-Build Condition, the Malabar Yard railroad improvements would not be implemented; however, ambient growth is applied to the existing traffic volumes to develop volumes for the Future Horizon Year (2040) to analyze intersections and roadway segments in this condition. This condition assumes City of Vernon General Plan improvements to roadways in the study area are complete.
Construction Year (2024) Condition[1]	Under Construction Year (2024) condition, construction activities including quantification of worker vehicle trips associated with the Malabar Yard railroad improvements would be considered. The construction at railroad crossings would commence by restricting the movements across the construction zones.
Opening Year (2024) Build Condition[1]	Under Opening Year (2024) Build condition, the Malabar Yard railroad improvements would be operational. This condition includes all improvements along all study area intersections and roadway segments according to the City of Vernon General Plan Circulation Element and the Project-related change in traffic volumes.

Table 3.3-2. Traffic Scenarios

Traffic Scenario	Description
Future Horizon Year (2040) Build Condition[2]	Under Future Horizon Year (2040) Build condition, the Malabar Yard railroad improvements would be operational. This condition includes all improvements along all study area intersections and roadway segments according to the City of Vernon General Plan Circulation Element and the Project-related change in traffic volumes.

Notes:
[1] At the time the Revised NOI was issued, Malabar Yard railroad improvements were planned to be completed and operational as early as 2024. If the opening year were to be delayed, the traffic volumes are anticipated to be marginally increased with the annual growth rate of 1 percent and less than the 10 percent tolerance threshold suggested by Caltrans for traffic forecasts. For the purpose of this environmental evaluation, maintaining the year 2024 as the construction complete year and opening year is not expected to severely impact the opening year traffic forecasts or analysis and does not result in a change in the conclusion. The traffic analysis presented herein was also used during the extensive public outreach with nearby property owners.
[2] Horizon year 2040 is consistent with the horizon year used in the EIS/SEIR for the Build Alternative. The SCAG 2016 RTP/SCS model was used for the Project's analysis. The horizon year of the SCAG 2016 RTP/SCS model is 2040. Therefore, horizon year 2040 was used.
Caltrans=California Department of Transportation; EIS=environmental impact statement; NOI=Notice of Intent; RTP=Regional Transportation Plan; SCAG=Southern California Association of Governments; SCS=Sustainable Communities Strategy; SEIR=supplemental environmental impact report

Intersection Level of Service Standards

The efficiency of traffic operations at a location is measured in terms of Level of Service (LOS). For intersections and roadway segments, LOS is determined by the ratio of volume to capacity (V/C) or by the average delay experienced by vehicles, pedestrians, and/or bicycles during peak hours.

As shown in the *County of Los Angeles Department of Public Works Traffic Impact Analysis Report Guidelines*, the Intersection Capacity Utilization procedures were followed in determining the LOS for signalized intersections. Under the Intersection Capacity Utilization methodology, the LOS is determined based on the ratio of V/C. Using the Intersection Capacity Utilization procedures, the quality of operation is graded into one of six LOS designations: A, B, C, D, E, or F with A representing excellent (free flow) conditions and F representing extreme congestion (forced or breakdown flow). LOS for intersections incorporates bicycle and pedestrian factors into the LOS calculation. Based on the property owner and business stakeholder engagement conducted in the City of Vernon, queuing analysis results for existing and proposed at-grade crossings are presented for informational purposes only; however, they are not a required component of the methodology to determine LOS impacts, and therefore, do not contribute to the NEPA determination of effects for LOS traffic impacts.

Table 3.3-3 provides a description of LOS values and corresponding V/C ratios for signalized intersections.

The *Highway Capacity Manual 6th Edition* methodology was used to calculate LOS for unsignalized intersections. Table 3.3-4 provides a description of LOS values and corresponding control delay for unsignalized intersections.

Table 3.3-3. Level of Service Definitions for Signalized Intersections

LOS	Definition/Interpretation	V/C
A	LOS A describes primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream.	0.00–0.60
B	LOS B describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted.	0.61–0.70
C	LOS C describes stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B.	0.71–0.80
D	LOS D indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections.	0.81–0.90
E	LOS E is characterized by unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections	0.91–1.00
F	LOS F is characterized by flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections has a V/C ratio greater than 1.0.	Above 1.00

Source: County of Los Angeles Department of Public Works Traffic Impact Analysis Report Guidelines
Notes:
LOS=level of service; V/C=volume-to-capacity

Table 3.3-4. Level of Service Definition for STOP Sign-Controlled Intersections

LOS	Unsignalized Intersection Delay (seconds per vehicle)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	≥ 50

Source: Transportation Research Board 2010
Notes:
LOS=level of service

Roadway Segment Operational Standards

Roadway segment LOS is based on the V/C ratio with roadway segment capacity analysis typically conducted for either daily or peak hour volumes. The V/C ratio was calculated using the roadway segment capacities contained in the City of Vernon General Plan and methodology in the *County of Los Angeles Department of Public Works Traffic Impact Analysis Report Guidelines*. Table 3.3-5 shows the correlations between V/C ratios and LOS for roadway segments.

Table 3.3-5. Level of Service Definition for Roadway Segments

LOS	Volume-to Capacity Ratio
A	0.000–0.600
B	0.601–0.700
C	0.701–0.800
D	0.801–0.900
E	0.901–1.000
F	>1.000

Source: City of Vernon General Plan and County of Los Angeles Department of Public Works Traffic Impact Analysis Report Guidelines
Notes:
LOS=level of service

Trip Re-Distribution and Assignment

The Malabar Yard railroad improvements would not generate new traffic trips and would only result in re-distribution of existing traffic. The change in traffic behavior is expected due to the following.

- **49th Street Closure** – The proposed closure of the existing at-grade railroad crossing at 49th Street would result in restriction to through traffic along 49th Street. Properties located on the east side of the railroad crossing would have to go around the closed crossing by using Pacific Boulevard, Santa Fe Avenue, and Fruitland Avenue to access properties located to the west side of the railroad crossing and vice versa.
- **46th Street Connector** – A portion of the 46th Street Connector is proposed within the existing road ROW between Pacific Boulevard and Soto Street, which is anticipated to redistribute 50 percent of the east/west through traffic from 46th Street to Leonis Boulevard.

Additional Traffic Analysis Prepared Based on Stakeholder Engagement

Metro conducted extensive property owner and business stakeholder engagement activities to obtain feedback regarding current operations and driveway access characteristics. As a result of these stakeholder engagement efforts, a total of 6 at-grade railroad crossings and 16 driveways were identified to determine if the proposed Malabar Yard railroad improvements would affect access, internal circulation, safety, and visibility at, or adjacent to, potentially affected properties.

In response to the feedback received from property owners and business stakeholders, a queuing analysis was conducted at six at-grade crossings to determine if the redistribution of traffic resulting from the Malabar Yard railroad improvements would result in any major increase in queue formation at these crossings when the crossing is closed to traffic to safely allow trains to pass through intersections. As noted above, queuing analysis is not used as a metric to determine the LOS and does not contribute to the NEPA determination of effects for LOS traffic impacts. This analysis was conducted as an addition to the LOS analysis only to address the concerns raised by private property owners regarding queueing, access, and safety in the vicinity of their properties and to determine if the increase in queue formation would exceed the existing storage capacity at any of these crossings.

Queuing Analysis

A queuing analysis was conducted for the AM and PM peak hours using *Highway Capacity Manual 6th Edition* methodology. A queuing analysis was conducted to determine if adequate amounts of vehicular storage capacity along adjacent roadways are available for the queue formation when a train is passing any one of the following six at-grade crossings during peak hours for the Existing (2020) Conditions and Opening Year (2024) No-Build and Build Conditions, using information from BNSF regarding train movements and operational characteristics:

- Railroad Crossing #1: At-Grade Crossing at 49th Street.
- Railroad Crossing #2: At-Grade Crossing at Pacific Avenue/46th Street intersection.
- Railroad Crossing #3: At-Grade Crossing on 46th Street east of Seville Avenue.
- Railroad Crossing #4: At-Grade Crossing south of Seville Avenue and 46th Street.
- Railroad Crossing #5: New At-Grade Crossing at Seville Avenue and 46th Street.
- Railroad Crossing #6: At-Grade Crossing on Downey Road south of Vernon Avenue.

Driveway Analysis and Truck Circulation

Based on discussions with Metro, a total of 16 private driveways in the traffic study area were identified for evaluation to determine effects related to property access, internal circulation, truck and vehicular turning movements, and regional access to/from the freeways. In addition to the analysis, extensive outreach with individual property owners was performed to obtain feedback from the owners and/or tenants of affected (physically impacted) and adjacent properties regarding their current operations and driveway access, internal circulation, and parking/loading

characteristics specific to each property. To evaluate the effects at the driveways due to the Malabar Yard railroad improvements, driveway counts were collected on a typical weekday in August 2020. The driveway counts were conducted during the AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak hours. The driveway counts were not normalized like the intersection and roadway counts because the driveways are not affected by COVID-19 since the businesses are all working full time.

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects for each of the topics considered is presented below. Mitigation measures to avoid or minimize potentially adverse effects are discussed in Section 3.3.5.

Traffic Delays

Intersections

An adverse effect would occur if the potential increase in the V/C ratio equals or exceeds the thresholds shown in Table 3.3-6.

Table 3.3-6. Adverse Transportation Effect Criteria for Intersections

LOS	Non-Project V/C	Project V/C Increase
C	0.71 to 0.80	0.04 or more
D	0.81 to 0.90	0.02 or more
E/F	0.91 or more	0.01 or more

Source: County of Los Angeles Department of Public Works Traffic Impact Analysis Report Guidelines
Notes:
LOS=level of service; V/C=volume-to-capacity

Roadway Segments

A project would have an adverse effect on two-lane roadways if it adds the following percentages shown in Table 3.3-7 based on LOS of the non-project conditions.

Table 3.3-7. Adverse Transportation Effect Criteria for Roadways

Directional Split	Total Capacity (vehicles per hour)	Percentages Increase in Vehicles Per Hour by Project (Non-Project LOS)		
		C	D	E/F
50/50	2,800	4%	2%	1%
60/40	2,650	4%	2%	1%

Table 3.3-7. Adverse Transportation Effect Criteria for Roadways

Directional Split	Total Capacity (vehicles per hour)	Percentages Increase in Vehicles Per Hour by Project (Non-Project LOS)		
		C	D	E/F
70/30	2,500	4%	2%	1%
80/20	2,300	4%	2%	1%
90/10	2,100	4%	2%	1%
100/0	2,000	4%	2%	1%

Source: County of Los Angeles Department of Public Works Traffic Impact Analysis Report Guidelines
Notes:
LOS=level of service

Los Angeles County Congestion Management Program

The Congestion Management Program (CMP) guidelines for determining CMP arterial monitoring intersections and freeway monitoring locations to be evaluated for potential effects are:

- All CMP arterial monitoring intersections where the project is expected to add 50 or more peak hour trips during either the AM or PM weekday peak hours of adjacent street traffic.
- All CMP main line freeway monitoring locations where the project is expected to add 150 or more trips in either direction during either the AM or PM weekday peak hours.

Since the Malabar Yard railroad improvements do not add any new trips on the roadway network, the CMP analysis is not required.

Design Features that Increase Hazards

An adverse effect would occur if ingress or egress hazards are caused by reductions to on-street truck loading/unloading zones or parking, if the Malabar Yard railroad improvements would prohibit trucks and vehicles from making proper turns, or if proposed infrastructure causes new hazards on existing roadways.

Emergency Access

Project-related effects would be considered adverse if street closures, detours, or lane reductions would cause traffic delays on local roadways that would impede access for emergency responders or evacuation along designated disaster routes.

Public Transit

Project-related effects on public transit services would be considered adverse if schedule delays to transit services would impact on-time performance goals or create capacity shortages on the system that would necessitate system improvements to accommodate additional transit service.

Bicycle and Pedestrian Facilities

Project-related effects would be considered adverse if pedestrian and bicycle access is disrupted or if pedestrian and bicycle facilities are removed and not replaced.

Freight

Project-related effects on freight would be considered adverse if physical impacts to freight facilities would create operational inefficiencies or increased congestion on the shared passenger/freight rail network in the region.

3.3.3 Affected Environment

This section describes key roadway segments and intersections, reports existing daily roadway and peak-hour intersection traffic volume information, and presents the LOS analysis for existing conditions.

Existing Roadway Network

The primary street network in the traffic study area is described below.

Santa Fe Avenue is a north-south arterial roadway, per the City of Vernon General Plan Circulation Element. It consists of two through lanes in each direction within the city limits. It has a posted speed limit of 35 mph. It has one left-turn pocket at all major connecting intersections. No bike lanes exist on the roadway. On-street parking is permitted at a few locations along the street. A portion of Santa Fe Avenue between Pacific Boulevard and Washington Boulevard is a County of Los Angeles designated disaster route.

Pacific Boulevard is a north-south arterial roadway, per the City of Vernon General Plan Circulation Element. It consists of three through lanes in each direction within the city limits. It has a posted speed limit of 40 mph. It has one left-turn pocket at all major connecting intersections. No bike lanes exist on the roadway. On-street parking is permitted at a few locations along the street. Pacific Boulevard is a County of Los Angeles designated disaster route.

Soto Street is a north-south arterial roadway, per the City of Vernon General Plan Circulation Element. It consists of two through lanes in each direction within the city limits. It has a posted speed limit of 35 mph. It has one left-turn pocket at all major connecting intersections. No bike lanes exist on the roadway. On-street parking is permitted at a few locations along the street.

Fruitland Avenue is an east-west collector roadway with one through lane in each direction, per the City of Vernon General Plan Circulation Element. It has posted speed limit of 35 mph. There are no bike lanes, although on-street parking is permitted at some locations.

Vernon Avenue is identified as a collector roadway with two through lanes in each direction, per the City of Vernon General Plan Circulation Element. It has posted speed limit of 30 mph. There are no bike lanes, although on-street parking is permitted at some locations.

46th Street is identified as a local roadway with one through lane in each direction, per the City of Vernon General Plan Circulation Element. There are no existing bike lanes, but on-street parking is available at some locations.

49th Street is identified as a local roadway with one through lane in each direction, per the City of Vernon General Plan Circulation Plan Element. There are no existing bike lanes, but on-street parking is available at some locations.

The intersections and roadway segments included as part of the evaluation are listed below and depicted in Figure 3.3-1.

Intersections

1. Santa Fe Avenue/49th Street.
2. Santa Fe Avenue/Fruitland Avenue.
3. Pacific Boulevard/49th Street.
4. Pacific Boulevard/Fruitland Avenue.
5. Vernon Avenue/Santa Fe Avenue.
6. Santa Fe Avenue/Pacific Boulevard.
7. 46th Street/Pacific Boulevard.
8. Vernon Avenue/Soto Street.
9. 46th Street/Soto Street.
10. Fruitland Avenue/Soto Street.

Roadway Segments

1. Santa Fe Avenue between 49th Street and Fruitland Avenue.
2. Pacific Boulevard between 49th Street and Fruitland Avenue.
3. 49th Street between Santa Fe Avenue and Pacific Boulevard.
4. Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard.
5. Santa Fe Avenue between 49th Street and Vernon Avenue.
6. Pacific Boulevard between 49th Street and Santa Fe Avenue.
7. 46th Street between Soto Street and Pacific Boulevard.
8. Vernon Avenue between Soto Street and Santa Fe Avenue.

9. Soto Street between Fruitland Avenue and Vernon Avenue.
10. Leonis Boulevard between Pacific Boulevard and Soto Street.
11. Seville Avenue between Fruitland Avenue and Vernon Avenue.

Existing Traffic Volumes and Operating Conditions

As previously discussed, the raw traffic counts that were conducted in August 2020 were normalized to pre-COVID-19 traffic levels by increasing the counts by a COVID factor of 1.67 in the AM peak hour and 1.54 in the PM peak hour.

Figure 3.3-2 and Figure 3.3-3 show the normalized existing AM and PM peak hour intersection turning movement volumes and roadway segment volumes, respectively. These volumes were used in the Existing (2020) LOS analysis and were used to characterize baseline volumes to develop the Opening Year (2024) and Future Horizon Year (2040) No-Build traffic volumes.

Figure 3.3-1. Traffic Study Area and Intersection/Roadway Segment Locations

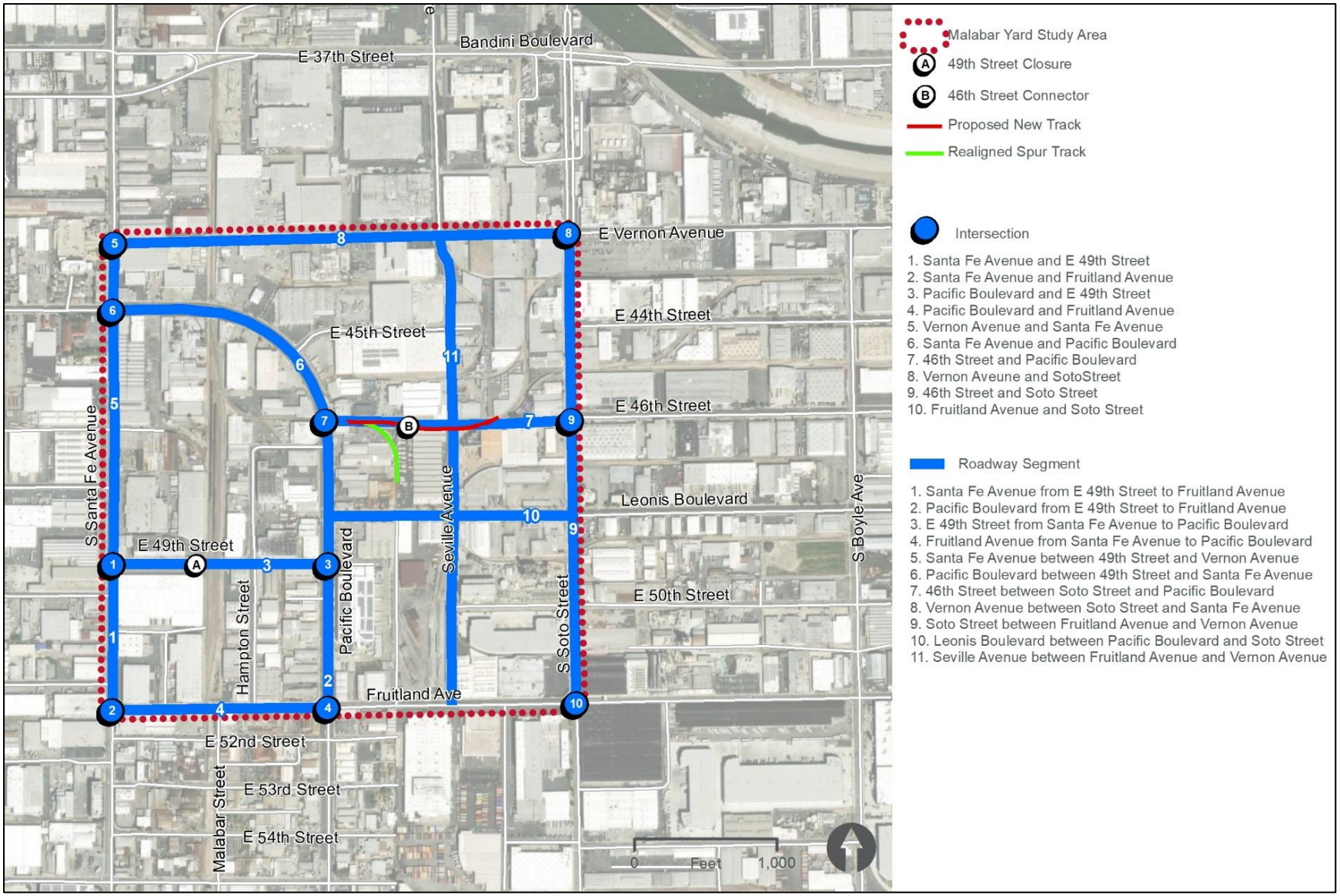

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Figure 3.3-2. Normalized Existing (2020) Peak Hour Turning Movement Counts at Traffic Study Area Intersections

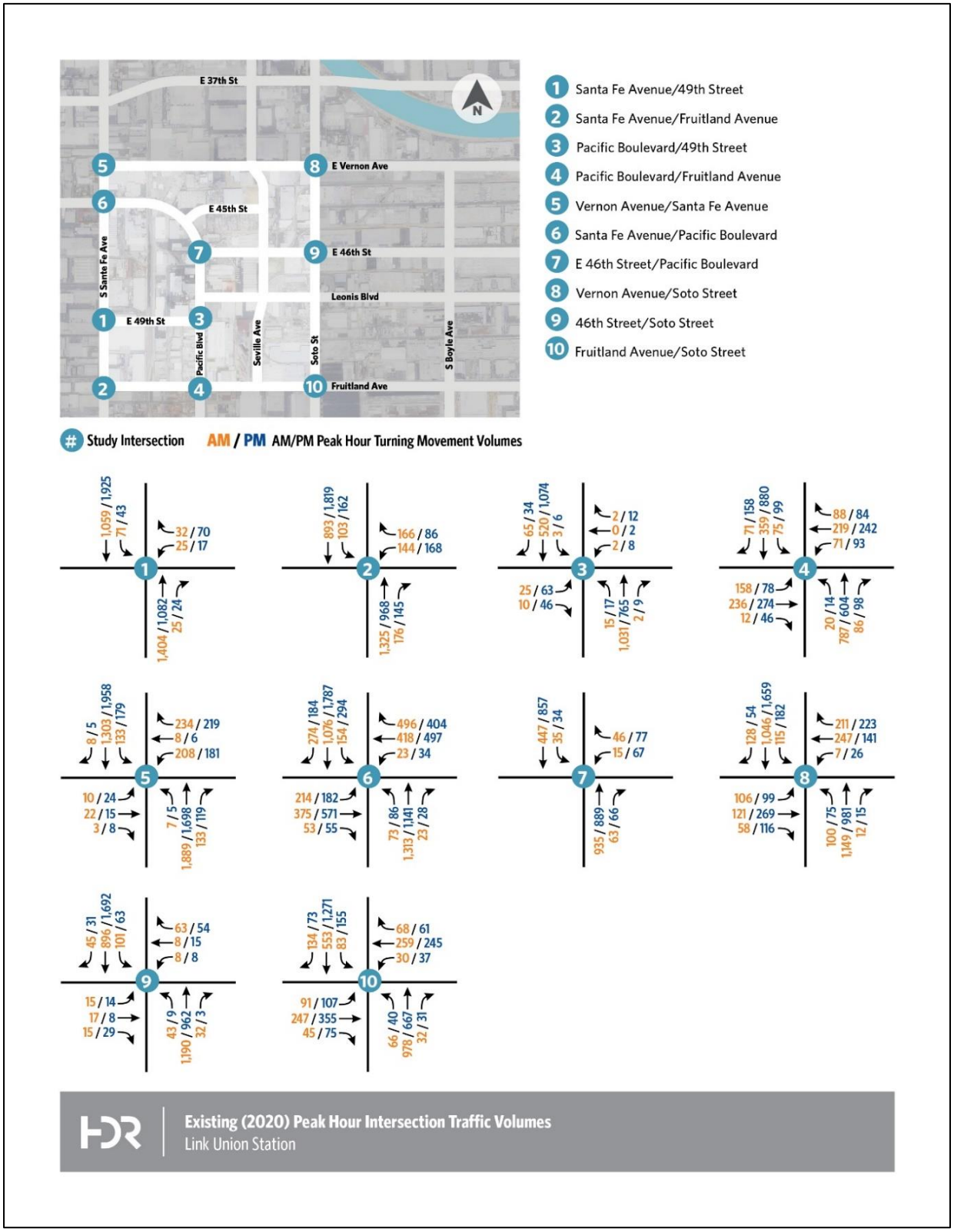

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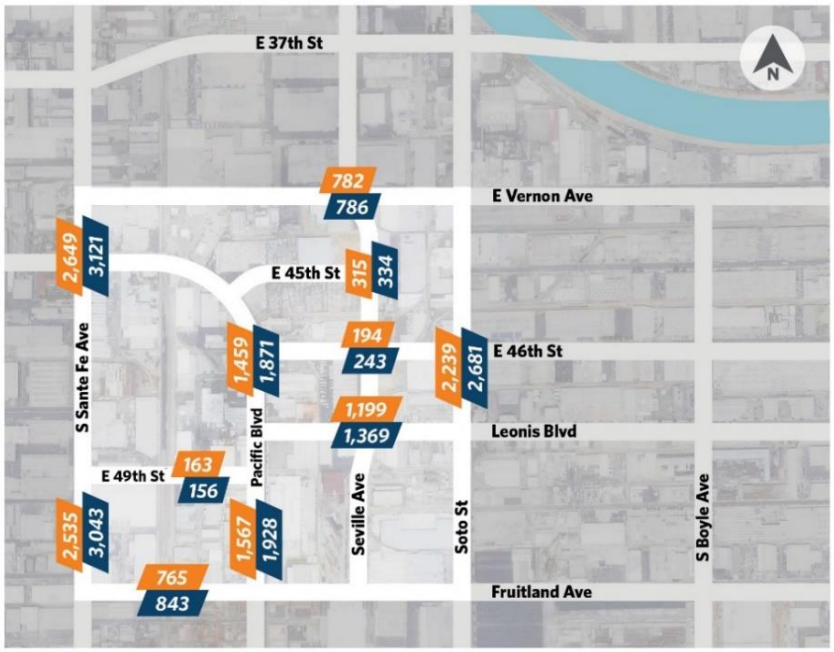
Figure 3.3-3. Normalized Existing (2020) Peak Hour Counts at Traffic Study Area Roadway Segments



	AM Peak Hr Volume	PM Peak Hr Volume
1. Santa Fe Ave between 49th St and Fruitland Ave	2,535	3,043
2. Pacific Blvd between 49th Street and Fruitland Ave	1,567	1,928
3. 49th St between Santa Fe Ave and Pacific Blvd	163	156
4. Fruitland Ave between Santa Fe Ave and Pacific Blvd	765	843
5. Santa Fe Ave between 49th St and Vernon Ave	2,649	3,121
6. Pacific Blvd between 49th St and Santa Fe Ave	1,459	1,871
7. 46th St between Soto St and Pacific Blvd	194	243
8. Vernon Ave between Soto St and Santa Fe Ave	782	786
9. Soto St between Fruitland Ave and Vernon Ave	2,239	2,681
10. Leonis Blvd between Pacific Blvd and Soto St	1,199	1,369
11. Seville Ave between Fruitland Avenue and Vernon Ave	315	334

HDR | **Existing (2020) Peak Hour Roadway Traffic Volumes**
Link Union Station

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Intersection and Roadway Existing Conditions Level of Service Analysis

Existing Intersection Level of Service

Table 3.3-8 presents intersection LOS and corresponding V/C and average vehicle delay results for study area intersections under Existing (2020) Conditions.

As shown in Table 3.3-8, three of the 10 study intersections currently operate at LOS D or better, and the following seven study intersections currently operate worse than LOS D under existing conditions:

- Intersection # 1: Santa Fe Avenue and 49th Street (LOS F during AM and PM Peak Hours).
- Intersection #3: Pacific Boulevard and 49th Street (LOS F during AM and PM Peak Hours).
- Intersection #5: Vernon Avenue and Santa Fe Avenue (LOS E during AM and PM Peak Hours).
- Intersection #6: Santa Fe Avenue and Pacific Boulevard (LOS E during AM Peak Hour and LOS F during PM Peak Hour).
- Intersection #7: 46th Street and Pacific Boulevard (LOS E during AM Peak Hour and LOS F during PM Peak Hour).
- Intersection #8: Vernon Avenue and Soto Street (LOS E during PM Peak Hour).
- Intersection # 9: 46th Street and Soto Street (LOS F during AM and PM Peak Hours).

Existing Roadway Segment Level of Service

Table 3.3-9 presents the LOS and V/C results for the study area roadway segments under Existing (2020) Conditions. As shown in Table 3.3-9, all 11 study area roadway segments currently operate at LOS A under existing conditions.

Local and Commuter Bus

As shown in Figure 3.3-4, three local bus routes, operated by Metro, currently operate within the study area. Routes 751 and 251 carry passengers along Soto Street with stops at Vernon Avenue and Fruitland Avenue. Route 611 carries passengers along Vernon Avenue and Leonis Boulevard with a stop at Santa Fe Avenue. Metro Rapid Line 760 runs along Santa Fe Avenue and Pacific Boulevard.

Pedestrian and Bicycle Network

The study area features sidewalks on both sides of the roadways within the study area. However, while bicycles represent an additional mode of travel, biking is not encouraged on the City's streets due to the heavy truck traffic and narrow configuration of many City streets, which would pose dangers to cyclists. No bicycle facilities or trails were identified within the study area.

Table 3.3-8. Existing (2020) Conditions Intersection Level of Service Summary

Number	Intersection	Traffic Control	AM			PM		
			V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS
1.	Santa Fe Avenue/49th Street	Two-way stop	>1	>50	**F**	>1	>50	**F**
2.	Santa Fe Avenue/Fruitland Avenue	Signalized	0.75	—	C	0.77	—	C
3.	Pacific Boulevard/49th Street	Two-way stop	>1	55.9	**F**	>1	>50	**F**
4.	Pacific Boulevard/Fruitland Avenue	Signalized	1.15	—	B	0.63	—	B
5.	Vernon Avenue/Santa Fe Avenue	Signalized	0.97	—	**E**	0.97	—	**E**
6.	Santa Fe Avenue/Pacific Boulevard	Signalized	0.97	—	**E**	1.07	—	**F**
7.	46th Street/Pacific Boulevard	Two-way stop	0.98	46.0	**E**	>1	>50	**F**
8.	Vernon Avenue/Soto Street	Signalized	0.77	—	C	0.92	—	**E**
9.	46th Street/Soto Street	Two-way stop	>1	>50	**F**	>1	>50	**F**
10.	Fruitland Avenue/Soto Street	Signalized	0.79	—	C	0.89	—	D

Notes:
Bold indicates LOS E or F
LOS=level of service; Sec=seconds; V/C=volume-to-capacity

Table 3.3-9. Existing (2020) Conditions Roadway Segment Level of Service Summary

Number	Roadway Name	Capacity	AM Peak Hour			PM Peak Hour		
			Volume	V/C	LOS	Volume	V/C	LOS
1.	Santa Fe Avenue between 49th Street and Fruitland Avenue	5,600	2,535	0.45	A	3,043	0.54	A
2.	Pacific Boulevard between 49th Street and Fruitland Avenue	8,400	1,567	0.19	A	1,928	0.23	A
3.	49th Street between Santa Fe Avenue and Pacific Boulevard	2,800	163	0.06	A	156	0.06	A
4.	Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard	2,800	765	0.27	A	843	0.30	A
5.	Santa Fe Avenue between 49th Street and Vernon Avenue	5,600	2,649	0.47	A	3,121	0.56	A
6.	Pacific Boulevard between 49th Street and Santa Fe Avenue	8,400	1,459	0.17	A	1,871	0.22	A
7.	46th Street between Soto Street and Pacific Boulevard	2,800	194	0.07	A	243	0.09	A
8.	Vernon Avenue between Soto Street and Santa Fe Avenue	5,600	782	0.14	A	786	0.13	A
9.	Soto Street between Fruitland Avenue and Vernon Avenue	5,600	2,239	0.40	A	2,681	0.48	A
10.	Leonis Boulevard between Pacific Boulevard and Soto Street	5,600	1,199	0.21	A	1,369	0.24	A
11.	Seville Avenue between Fruitland Avenue and Vernon Avenue	2,800	315	0.11	A	334	0.12	A

Notes:
LOS=level of service; V/C=volume-to-capacity

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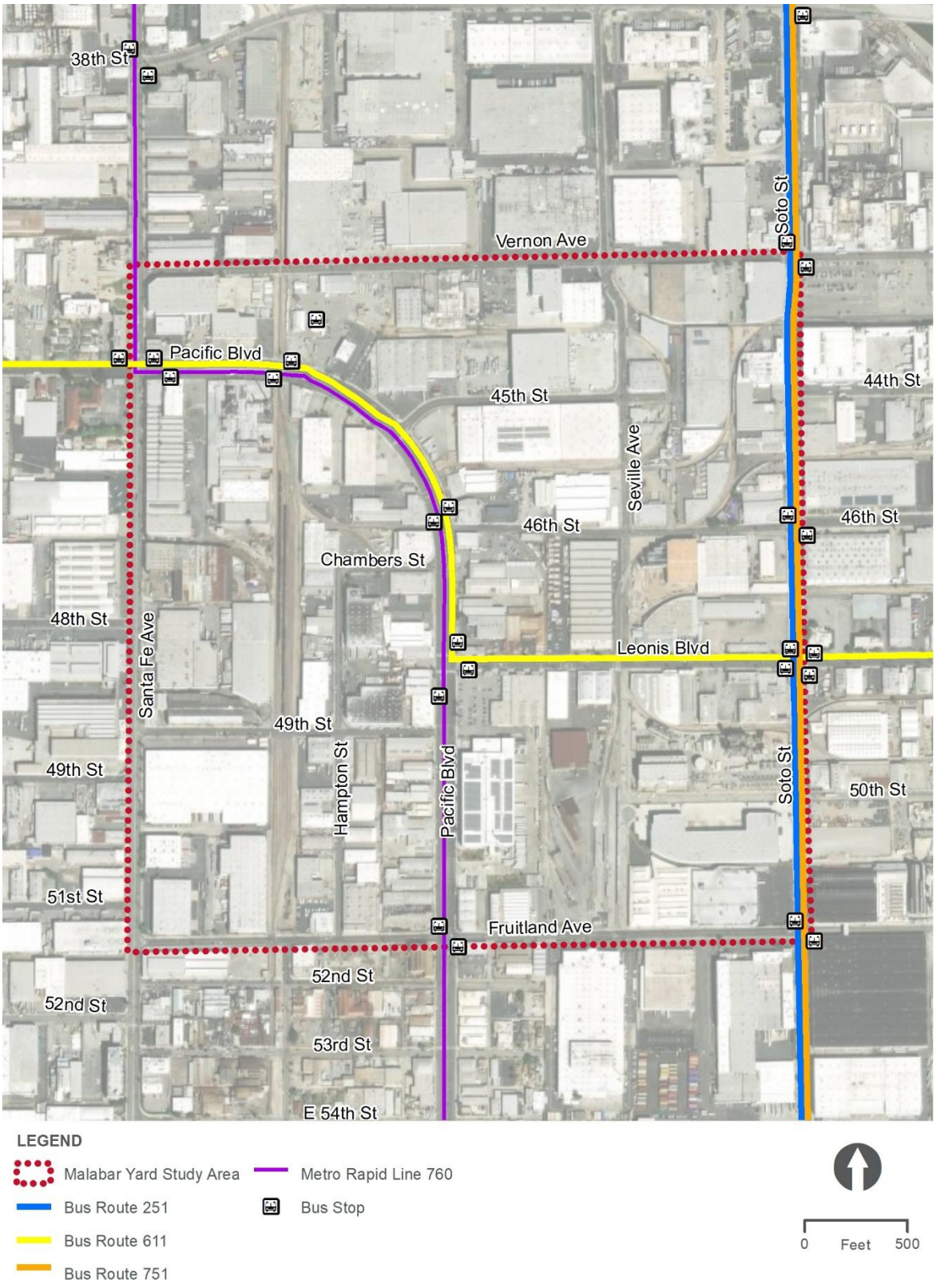
Figure 3.3-4. Existing Bus Routes in Traffic Study Area



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Queuing at Railroad Crossings

Train volumes for the railroad crossings considered in this evaluation were obtained from FRA crossing inventory and BNSF. The queuing results at the railroad crossings are provided in Table 3.3-10, which shows the queue formation exceeds the storage capacity at the following three railroad crossings:

- Railroad Crossing #3: 46th Street east of Seville Avenue in eastbound through direction during AM and PM peak hours.
- Railroad Crossing #4: South of Seville Avenue and 46th Street in northbound through direction during AM peak hour and in southbound through direction during AM and PM peak hours.
- Railroad Crossing #6: Downey Road south of Vernon Avenue in northbound and southbound through directions during AM and PM peak hours.

Table 3.3-10. Existing (2020) Condition Queuing Analysis Summary

Number	Railroad Crossing	Direction	Storage (feet)	Existing	
				AM (feet)	PM (feet)
1	At-Grade Crossing at 49th Street	EBT	610	32	52
		WBT	680	22	64
2	At-Grade Crossing at Pacific Avenue/46th Street intersection	WBL	500	34	116
		NBT	600	198	493
		SBL	90	32	71
		SBT	1000	90	436
3	At-Grade Crossing on 46th Street east of Seville Avenue	EBT	135	**176**	**176**
		WBT	400	118	247
4	At-Grade Crossing south of Seville Avenue and 46th Street	NBT	400	**471**	186
		SBT	150	**164**	**473**
5	New At-Grade Crossing at Seville Avenue and 46th Street	NBT	80	—	—
		SBT	80	—	—
6	At-Grade Crossing on Downey Road south of Vernon Avenue	NBT	700	**1,284**	**1,200**
		SBT	215	**964**	**1,497**

Notes:
Bold indicates queue exceeds storage capacity.
EBT=eastbound through; NBT=northbound through; WBL=westbound left; WBT=westbound through; SBT=southbound through

Driveways

The total (AM and PM combined) number of vehicles entering and exiting the driveways considered in the analysis along with its locations is presented on Figure 3.3-5.

Figure 3.3-5. Existing (2020) Conditions Driveway Traffic Volumes

Study Driveway

Driveway Number	IN	OUT
1	15	25
2	10	14
3	0	0
4	0	0
5	4	8
6	0	0
7	0	0
8	0	0

Driveway Number	IN	OUT
9	0	4
10	1	1
11	30	29
12	7	6
13	0	0
14	14	19
15	24	55
16	0	5

HDR | **Existing (2020) Driveway Volumes**
Link Union Station

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3.3.4 Environmental Consequences

No Action Evaluation

The following topics were evaluated to determine potential effects if the Malabar Yard railroad improvements in the City of Vernon were not implemented in conjunction with the Build Alternative.

Traffic Delays that Limit the Effectiveness of the Traffic Circulation System

No Project-related changes to the roadway network would occur and no direct short-term increases in construction-related vehicle trips or new operational trips would be added to the roadway network. Some roadway modifications in the traffic study area can be expected from other cumulative projects and improvements identified in the latest Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS).

In Opening Year (2024), two of the 10 study intersections currently operate at LOS D or better, and the following eight study intersections currently operate worse than LOS D under Opening Year (2024) No Action Alternative:

- Intersection # 1: Santa Fe Avenue and 49th Street (LOS F during AM and PM Peak Hours).
- Intersection #3: Pacific Boulevard and 49th Street (LOS F during AM and PM Peak Hours).
- Intersection #5: Vernon Avenue and Santa Fe Avenue (from LOS E to LOS F during AM and PM Peak Hours).
- Intersection #6: Santa Fe Avenue and Pacific Boulevard (LOS E during AM Peak Hour and LOS F during PM Peak Hour).
- Intersection #7: 46th Street and Pacific Boulevard (LOS E during AM Peak Hour and LOS F during PM Peak Hour).
- Intersection #8: Vernon Avenue and Soto Street (LOS E during PM Peak Hour).
- Intersection # 9: 46th Street and Soto Street (LOS F during AM and PM Peak Hours).

Since no new operational trips would be added to the roadway network, no direct Project-related effects on the existing LOS in the traffic study area would occur.

In 2040, the following improvement is also included in the analysis as it is reflected in the City of Vernon General Plan Circulation Element:

- Soto Street between Fruitland Avenue and Vernon Avenue would be widened from four lanes to six lanes, three in each direction.

In 2040, all traffic study intersections would operate at LOS E or F in at least one peak hour:

- Intersection # 1: Santa Fe Avenue and 49th Street (LOS F during AM and PM Peak Hours).
- Intersection #2: Santa Fe Avenue and Fruitland Avenue (from LOS C to LOS E during AM Peak Hour and from LOS C to LOS F during PM Peak Hour).
- Intersection #3: Pacific Boulevard and 49th Street (LOS F during AM and PM Peak Hours).
- Intersection #4: Pacific Boulevard and Fruitland Avenue (from LOS B to LOS E during PM Peak Hour).
- Intersection #5: Vernon Avenue and Santa Fe Avenue (from LOS E to LOS F during AM and PM Peak Hours).
- Intersection #6: Santa Fe Avenue and Pacific Boulevard (from LOS E to LOS F during AM Peak Hour and LOS F during PM Peak Hour).
- Intersection #7: 46th Street and Pacific Boulevard (from LOS E to LOS F during AM Peak Hour and LOS F during PM Peak Hour).
- Intersection #8: Vernon Avenue and Soto Street (from LOS E to LOS F during PM Peak Hour).
- Intersection # 9: 46th Street and Soto Street (LOS F during AM and PM Peak Hour).
- Intersection #10: Fruitland Avenue and Soto Street (from LOS D to LOS F during PM Peak Hour).

Without implementation of the Malabar Yard railroad improvements, these study intersections would continue to operate poorly in 2040. Therefore, an indirect adverse effect related to traffic circulation and operation would occur.

No mitigation is proposed to minimize this indirect adverse effect other than implementation of the Malabar Yard railroad improvements.

Design Features or Incompatible Uses that Increase Hazards

The existing configuration at the 49th Street and 46th Street adjacent to Malabar Yard would remain in its current configuration and existing operational characteristics at Malabar Yard would remain unchanged. No major changes to the roadway network would occur with exception of background traffic, infill development, and/or projects proposed in the 2020 RTP/SCS. In this context, no direct or indirect adverse effect would occur.

Emergency Access

If the Malabar Yard railroad improvements were not implemented, no changes to designated disaster routes (Pacific Boulevard) would occur, nor there would be any construction activities that would otherwise affect emergency access.

Operations would remain unchanged and emergency routes and access within the study area would remain in their existing configuration with no changes to the capacity. In this context, no direct or indirect adverse effect would occur.

Public Transit, Bicycle, or Pedestrian Facilities

If the Malabar Yard railroad improvements were not implemented, the existing configuration of Malabar Yard and existing sidewalks along 49th Street and 46th Street would remain in their current configuration. There would be no construction activities that would temporarily disrupt regional/intercity rail service or cause decreased performance for transit operators. Daily travel patterns for commuters, bicyclists, and pedestrians around Malabar Yard would not be affected by construction activities or temporary roadway detours or closures. Therefore, no direct or indirect adverse effect would occur.

Freight

If the Malabar Yard railroad improvements were not implemented, the existing tracks at the Malabar Yard would remain in the current configuration and operations at the Malabar Yard would remain unchanged. No new connection along 46th Street would be made to facilitate direct access between Malabar Yard and the Los Angeles Junction. Therefore, no direct or indirect adverse effect would occur.

Evaluation of Malabar Yard Railroad Improvements

TOPIC 3.3-A	Traffic delays that limit the effectiveness of the traffic circulation system

Direct Effects – Construction

Construction of any combination of design options for the Malabar Yard railroad improvements would require construction workers, the import and export of materials and equipment, and the localized movement of equipment to and from multiple locations within the traffic study area. The additional traffic generated during construction would consist of construction equipment, construction employee vehicles, and construction material deliveries in trucks. A detailed construction scenario was prepared to identify AM and PM peak hour traffic estimates.

- Construction of the improvements at 49th Street is estimated to generate 61 construction worker daily trips (61 in the AM peak and 61 in PM peak hour) and 51 equipment vehicle trips.
- Similarly, construction of the improvements along 46th Street is estimated to generate 61 construction worker daily trips (61 in the AM peak and 61 in PM peak hour) and 60 equipment vehicle trips.

The construction workers are assumed to use the nearest freeways to access the 46th and 49th Street construction locations. It is assumed that these trips would enter the construction site in the AM peak hour and exit the site during the PM peak hour on a daily basis. Typically, most of

the equipment trips would not enter and exit the site on a daily basis, instead the equipment vehicles would be stored on site for the duration of construction. Any equipment trips in and out of the construction site will occur during the off-peak hours. Therefore, the construction equipment trips were not included in the peak hour analysis. The construction worker trips generated for the construction activities were distributed to the site from the freeways using major streets such as Santa Fe Avenue, Pacific Boulevard, and Soto Street. The distributed construction worker trips were added to the Opening Year (2024) No-Build volumes to determine the Construction Year (2024) volumes.

Construction Year (2024) Condition

Intersections. As shown in Table 3.3-11, in the Construction Year (2024) condition, two intersections would be subject to potential increases in V/C ratio that would exceed the *County of Los Angeles Department of Public Works Traffic Impact Analysis Report Guidelines* thresholds (Table 3.3-6). Based on the anticipated construction-related increases in V/C ratio at these two impacted intersections, this is considered a direct adverse effect.

- Intersection #5: Vernon Avenue/Santa Fe Avenue (LOS F during PM Peak Hour).
- Intersection #6: Santa Fe Avenue/Pacific Boulevard (LOS F during AM Peak Hour).

Implementation of Malabar Yard Mitigation Measures TR-1 through TR-3 (described in Section 3.3.5) would minimize traffic delays during construction.

- Malabar Yard Mitigation Measure TR-1 requires the construction contractor to obtain approval from Metro and the City of Vernon 30 days prior to implementation of a TMP to address construction-related vehicular traffic impacts. The TMP will identify proposed closure schedules and detour routes, as well as construction traffic routes, including haul truck routes, and preferred delivery/haul-out locations and hours to avoid heavily congested areas during peak hours, where feasible. In addition, the following provisions shall be included in the TMP:
  - Traffic flow shall be maintained, particularly during peak hours, to the degree feasible.
  - Access to adjacent businesses shall be maintained during business hours via existing or temporary driveways, as feasible.
  - Metro, the City of Vernon, or the contractor shall post advance notice signs prior to construction in areas where access to local businesses could be affected. Metro shall provide signage to indicate new ways to access businesses and community facilities, if affected by construction.
  - Metro shall notify City of Vernon 5 business days in advance of street closures, detours, or temporary lane reductions.
- Malabar Yard Mitigation Measure TR-2 requires Metro and BNSF to obtain approval from the City of Vernon 30 days prior to implementing temporary restriping of the westbound

shared through/right-turn lane to a westbound right-turn-only lane at Vernon Avenue and to add a right-turn overlap phase in the same direction.

- Malabar Yard Mitigation Measure TR-3 requires Metro and BNSF to obtain approval from the City of Vernon 30 days prior to implementing restriping of one eastbound through lane to an eastbound turn lane at Vernon Avenue.

During AM and PM peak hours, with implementation of Malabar Yard Mitigation Measures TR-1 through TR-3, the V/C ratios at Intersections #5 and #6 would be equal to or less than the V/C ratios without mitigation measures. Although Malabar Yard Mitigation Measures TR-1 through TR-3 would minimize the potential traffic delays during construction, Metro will continue to work with the City of Vernon to establish the level of effectiveness for the mitigation measures; therefore, no direct adverse effect would occur.

Direct Effects – Operations

Traffic Delays – Intersections and Roadway Segments

Opening Year (2024) Build Condition

The intersection control improvements that are included under the Opening Year (2024) Build Condition are as follows:

- The intersection of the Pacific Boulevard and 46th Street is currently operating as a two-way stop control under the Existing (2020) conditions. Either design option for the 46th Street Connector would include addition of a new traffic signal at this intersection in conjunction with other at-grade railroad crossing enhancements.

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Table 3.3-11. Construction Year (2024) Condition Intersection Level of Service Summary

Number	Intersection	Traffic Control	Without Construction				With Construction				Change in V/C	Adverse Effect?	With Construction & Mitigation			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				AM Peak Hour		PM Peak Hour	
			V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS			V/C	LOS	V/C	LOS
5	Vernon Avenue/Santa Fe Avenue	Signalized	1.00	**F**	1.00	**F**	1.00	**F**	1.03	**F**	0.03(PM)	**Yes**	1.00	**F**	1.00	**F**
6	Santa Fe Avenue/Pacific Boulevard	Signalized	1.01	**F**	1.11	**F**	1.05	**F**	1.11	**F**	0.04(AM)	**Yes**	1.01	**F**	0.97	**E**

Notes:
Bold indicates LOS E or F
LOS=level of service; V/C=volume-to-capacity;

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Intersections. As shown in Table 3.3-12, in the Opening Year (2024) Build Condition, one intersection would be subject to potential redistribution of vehicular traffic that would exceed the applicable V/C ratio per the *County of Los Angeles Department of Public Works Traffic Impact Analysis Report Guidelines* thresholds (Table 3.3-6). Based on the anticipated increase in V/C ratio at this intersection, this is considered a direct adverse effect.

- Intersection #6: Santa Fe Avenue/Pacific Boulevard (LOS E during AM Peak Hour).

Although the proposed closure at 49th Street (between Pacific Boulevard and South Santa Fe Avenue), this intersection would not experience a new traffic delay. This proposed closure occurs only at the existing at-grade railroad crossing location and not the entire segment between Pacific Boulevard and South Santa Fe Avenue. Although some through traffic at the railroad crossing would need to be diverted to adjacent local roads, the relatively low traffic demand along 49th Street (less than 200 vehicles during the peak hours under all conditions) is not anticipated to have adverse impacts on traffic. Properties located on the east or west side of the railroad crossing would still be accessible from outside destinations.

Implementation of Malabar Yard Mitigation Measure TR-3 (described in Section 3.3.5) is proposed to minimize the potential increase in V/C ratio at Intersection #6: Santa Fe Avenue/Pacific Boulevard. As discussed above under Construction, Malabar Yard Mitigation Measure TR-3 requires restriping one eastbound through lane to an eastbound turn lane at Vernon Avenue. As shown in Table 3.3-12, with implementation of Malabar Yard Mitigation Measure TR-3, the V/C ratio at Intersection #6, under the Opening Year (2024) Build Condition would be less than the V/C ratio without mitigation measures. With the implementation of Malabar Yard Mitigation Measure TR-3, no direct adverse effect would occur.

Roadway Segments. All traffic study area roadway segments would operate at LOS D or better in the Opening Year (2024) Build Condition. Therefore, no direct adverse effect would occur.

Future Horizon Year (2040) Build Condition

Intersections. As shown in Table 3.3-13, in the Future Horizon Year (2040) Build condition, one intersection would be subject to potential increase in V/C ratio that would exceed the *County of Los Angeles Department of Public Works Traffic Impact Analysis Report Guidelines* thresholds (Table 3.3-6). Based on the anticipated increase in V/C ratio at this intersection, this is considered a direct adverse effect.

- Intersection #4: Pacific Boulevard/Fruitland Avenue (LOS D during AM Peak Hour).

For the Future Horizon Year (2040) Build condition, implementation of Malabar Yard Mitigation Measure TR-4 (described in Section 3.3.5) is proposed to minimize the potential increase in V/C ratio at Intersection #4: Pacific Boulevard/Fruitland Avenue. Malabar Yard Mitigation Measure TR-4 requires Metro and BNSF, in coordination with the City of Vernon, to implement restriping of the northbound shared through/right-turn lane to a right-turn-only lane and a through lane at Pacific Boulevard. As shown in Table 3.3-13, with implementation of Malabar

Yard Mitigation Measure TR-4, the V/C ratio at Intersection #4 under the Future Horizon Year (2040) Build Condition would be less than the V/C ratio without mitigation measures during AM and PM peak hours. As discussed above, with implementation of Malabar Yard Mitigation Measure TR-3, the potential increase in V/C ratio at Intersection #6: Santa Fe Avenue/Pacific Boulevard would also be minimized throughout operations. For the Future Horizon Year (2040) Build condition, with the implementation of Malabar Yard Mitigation Measure TR-4, no direct adverse effect would occur.

Roadway Segments. As shown in Table 3.3-14, in the Future Horizon Year (2040) Build Condition, one roadway segment would exceed the *County of Los Angeles Department of Public Works Traffic Impact Analysis Report Guidelines* thresholds (Table 3.3-7). Based on the anticipated increase in V/C ratio at this roadway segment, this is considered a direct adverse effect.

- Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard (PM Peak Hour).

Implementation of Malabar Yard Mitigation Measure TR-5 (described in Section 3.3.5) is proposed to minimize adverse effects at Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard. Malabar Yard Mitigation Measure TR-5 requires Metro and BNSF, in coordination with the City of Vernon, to implement a new westbound vehicular lane on Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard. As shown in Table 3.3-14, with implementation of Malabar Yard Mitigation Measure TR-5, the LOS at Roadway Segment #4 under the Future Horizon Year (2040) Build Condition would be LOS B or better during AM and PM peak hours. With the implementation of Malabar Yard Mitigation Measure TR-5, no direct adverse effect would occur.

Indirect Effects – Construction and Operations

Any combination of design options for the Malabar Yard railroad improvements would result in no indirect effect.

Table 3.3-12. Opening Year (2024) Build Condition Intersection Level of Service Summary

Number	Intersection	Traffic Control	No-Build				Build				Change in V/C	Adverse Effect?	With Build & Mitigation			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				AM Peak Hour		PM Peak Hour	
			V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS			V/C	LOS	V/C	LOS
6	Santa Fe Avenue/Pacific Boulevard	Signalized	0.96	**E**	1.09	**F**	0.98	**E**	1.07	**F**	0.02	**Yes**	0.91	**E**	1.01	**F**

Notes:
Bold indicates LOS E or F
LOS=level of service; V/C= volume to capacity

Table 3.3-13. Future Horizon Year (2040) Build Condition Intersection Level of Service Summary

Number	Intersection	Traffic Control	No-Build				Build				Change in V/C	Adverse Effect?	With Build & Mitigation			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour				AM Peak Hour		PM Peak Hour	
			V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS			V/C	LOS	V/C	LOS
4	Pacific Boulevard/Fruitland Avenue	Signalized	0.80	D	0.73	**C**	0.82	D	0.74	C	0.02	**Yes**	0.79	C	0.72	C

Notes:
Bold indicates LOS E or F
LOS=level of service; V/C= volume to capacity

Table 3.3-14. Future Horizon Year (2040) Build Condition Roadway Segments Level of Service Summary

Number	Roadway Name	No-Build				Build						Change in V/C	Adverse Effect?	With Build & Mitigation			
		AM Peak Hour		PM Peak Hour		AM Peak Hour			PM Peak Hour					AM Peak Hour		PM Peak Hour	
		V/C	LOS	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS			V/C	LOS	V/C	LOS
4	Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard	0.33	A	0.36	A	2,474	0.88	D	2,861	**1.02**	**F**	0.55/0.66	**Yes**	0.59	A	0.68	B

Notes:
Bold indicates LOS E or F
LOS=level of service; V/C= volume to capacity

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TOPIC 3.3-B	Design of existing roadways and intersections causing increased hazards

Direct Effects – Construction

The existing roadways and intersections may be subject to temporary detours and lane blockages at multiple locations throughout the traffic study area during construction activities. As a result, construction activities associated with any combination of design options for the Malabar Yard railroad improvements would result in temporary construction-related roadway hazards in the traffic study area to motorists, pedestrians, and bicyclists. This is considered an adverse effect. However, with the implementation of Malabar Yard Mitigation Measure TR-1 (described in Section 3.3.5), which requires the preparation and implementation of a TMP to minimize construction-related roadway hazardous conditions, these impacts would be minimized. The TMP requires traffic flow to be maintained to the safest degree feasible, notice signs to be posted prior to construction in areas where access to local businesses could be affected, and notification to be coordinated with the City of Vernon in advance of street closures, detours, or temporary lane reductions. Implementation of Malabar Yard Mitigation Measure TR-1 would minimize impacts related to roadway hazards during construction. With the implementation of Malabar Yard Mitigation Measure TR-1, no direct adverse effect would occur.

Direct Effects – Operations

Driveways and Truck Turning Movements

Based on the heavy presence of industrial land uses and stakeholder feedback received on the heavy truck use in the traffic study area, a truck turning movement analysis was performed, using a 65-foot-long “CA Legal” truck turning template. The analysis was based on the site observations of the typical trucks in use for the affected properties in the traffic study area. This analysis was performed to evaluate the impact on truck turning ingress/egress and vehicular circulation in terms of the ability to make safe movements without increased hazards or introduction of incompatible design features. The truck circulation analysis was conducted for existing (No-Build) and Build conditions and the results of the turning movement analysis at each driveway are described below:

- **49th Street Closure**
  - **Driveway Nos. 1, 2, and 3:** Either design option for the 49th Street Closure would reconfigure existing Driveways Nos. 2 and 3; however, adequate truck turning ingress/egress would be maintained.
- **46th Street Connector**
  - **Driveway No. 4:** The installation of medians on Pacific Boulevard as part of either design option for the 46th Street Connector would have no effect on the truck turning ingress/egress for this existing driveway.
  - **Driveway Nos. 5, 6, 7, 8, and 9:** Driveways 5 and 6 would not be reconfigured by either design option for the 46th Street Connector since the proposed chain-link fence

would not block these two driveways. For Design Option 1, Driveway Nos. 7 and 8 would be closed, and Driveway No. 9 would be reconfigured and remain open for continued business access/egress and operations. For Design Option 2, Driveway No.7, Driveway No.8, and Driveway No. 9 would all be reconfigured and will remain open for continued business access/egress and operations.

- **Driveway No. 10:** Trucks do not use this driveway. Driveway No. 10 will be closed as part of the Malabar Yard railroad improvements. The access to this property will be maintained from Driveway No. 9.
- **Driveway Nos. 11 and 12:** The raised median on either side of the railroad crossing along 46th Street would reconfigure the truck turning ingress/egress for these two driveways. Both driveways would be maintained but would become right-in/right-out only as a result of either design option for the 46th Street Connector.
- **Driveway No. 13:** This is a new driveway and under either design option would provide right-in/right-out only access.
- **Driveway Nos. 14, 15, and 16:** These three driveways would not be affected because either design option would not be located adjacent to these driveways.

All Malabar Yard railroad improvements would be designed and constructed to comply with applicable agency standards and specifications to maximize safety for both motorized and non-motorized forms of transportation. Based on the results of the field observations and truck turning movements analysis, no increased hazards or introduction of incompatible design features would occur that would adversely affect truck turning movements or vehicular circulation.

Signal, Safety, and Civil Improvements

As discussed in Section 2.0, either design option for the 46th Street Connector includes the following safety, signal, and civil improvements:

- Installation of railroad signals, flashers, gate arms, on two sides at the existing Seville Avenue railroad crossing and 46th Street railroad crossing.
- Expansion of curb line, sidewalk/ramp, and driveway improvements along the west side of Pacific Boulevard.
- Installation of traffic signals for all directions at the Pacific Boulevard and 46th Street intersection.
- Installation of center medians for north and south sides of the Pacific Boulevard and 46th Street intersection.
- Striping improvements at the Pacific Boulevard and 46th Street intersection.
- New curb line and sidewalk/ramp improvements along the east side of Pacific Boulevard.
- Asphalt replacement and roadway restriping along 46th Street from Pacific Boulevard to the eastern end of improvements.

- Installation of new traffic signals in all directions at Seville Avenue and 46th Street.
- Installation of center medians on the north and south sides of the Seville Avenue railroad crossing and existing Seville Avenue crossing.
- Installation of center medians on the east and west sides of the existing 46th Street railroad crossing.
- Asphalt replacement and roadway restriping along Seville Avenue from 46th Street to the southern end of improvements.
- New curb line and sidewalk/ramp improvements along the south side of 46th Street and at the southeast and southwest corners of the Seville Avenue and 46th Street intersection.

Either design option for the 49th Street Closure would require the following signal, safety, and civil improvements to maximize safety for both motorized and non-motorized forms of transportation:

- New roadway signage at the east side of the Santa Fe Avenue and 49th Street intersection.
- Replacement of the existing sidewalk and asphalt as part of cul-de-sac improvements along 49th Street.
- Restriping of 49th Street.
- Installation of new removable bollards east of the tracks.
- Installation of new roadway signage at the west side of the Hampton Street and 49th Street intersection.

Queuing Analysis – Railroad Crossings

As discussed above, a queuing analysis was prepared in response to stakeholder engagement activities to determine whether the existing travel lane storage capacity is adequate to accommodate the queue formations generated from re-distributed traffic. Opening Year (2024) No-Build and Build Condition queuing analysis was performed at the five existing railroad crossings and the new crossing proposed as part of the Malabar Yard railroad improvements in the traffic study area. The Opening Year (2024) train volumes for the railroad crossings were obtained from BNSF. The queue formation exceeds the storage capacity at the following three railroad crossings:

- Existing Railroad Crossing #4: South of Seville Avenue and 46th Street in southbound through direction during AM peak hour.
- New Railroad Crossing #5: Seville Avenue and 46th Street in northbound through and southbound through direction during AM and PM peak hours, respectively.
- Existing Railroad Crossing #6: Downey Road south of Vernon Avenue in northbound through and southbound through direction during AM and PM peak hours.

The queue formation at the Existing Railroad Crossing #4 and #6 already exceeds the storage capacity during the No-Build scenario. At these existing railroad crossings, the increase in queue formation from the Malabar Yard railroad improvements is a maximum of 25 feet (one vehicle) and not considered a substantial change.

Notwithstanding the signal, safety, and civil improvements acknowledged above, the New Railroad Crossing #5 at the intersection of Seville Avenue and 46th Street would introduce a potential roadway hazard due to queuing that would cause southbound vehicular traffic to extend across 46th Street. On Seville Avenue south of 46th Street, two separate sets of gate arms proposed near each other would introduce a potential roadway hazard due to northbound and southbound vehicle queuing. This is considered an adverse effect. Malabar Yard Mitigation Measure TR-6 minimizes the potential roadway hazard; however, to establish the level of effectiveness for the mitigation measures, further coordination with CPUC and the City of Vernon is required.

Indirect Effects – Construction and Operations

Any combination of design options for the Malabar Yard railroad improvements would result in no indirect adverse effect.

TOPIC 3.3-C	Emergency Access

Direct Effects – Construction

Construction activities would require temporary roadway closures and detours that could result in impacts on emergency response and access, due to potential delays in response times for emergency vehicles. Not all roadway closures would occur at the same time and access disruptions are expected to be temporary, intermittent, and would not exceed 18 months. As discussed above under Topic 3.3-A, implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #5: Vernon Avenue/Santa Fe Avenue and Intersection #6: Santa Fe Avenue/Pacific Boulevard); which may also impede access for emergency responders throughout construction. In addition, these two intersections are along a designated disaster route. This is considered an adverse effect. Implementation of Malabar Yard Mitigation Measure TR-1 (described in Section 3.3.5) requires a TMP to be prepared, clearly marked detours to be implemented, and advanced notice provided to emergency service providers, public transit and bus operators, the bicycle community, businesses, and organizers of special events. The TMP requires traffic flow to be maintained to the safest degree feasible and the City of Vernon to be notified 5 business days in advance of street closures, detours, or temporary lane reductions. Malabar Yard Mitigation Measures TR-2 and TR-3 require restriping at the Vernon Avenue/Santa Fe Avenue intersection and Santa Fe Avenue/Pacific Boulevard intersection, respectively. Implementation of Malabar Yard Mitigation Measures TR-1 through TR-3 would minimize construction-related effects related to emergency response and access and evacuation along designated disaster routes. Therefore, with the implementation of Mitigation Measures TR-1 through TR-3, no direct adverse effect would occur.

Direct Effects – Operations

As discussed above under Topic 3.3-A, implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard), which may impede access for emergency responders throughout operations. Intersection #6 is located along a designated disaster route. This is considered an adverse effect. Implementation of Malabar Yard Mitigation Measures TR-3 and TR-4 (described in Section 3.3.5) are proposed to improve the V/C ratio at Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue, respectively. Implementation of Malabar Yard Mitigation Measure TR-5 (described in Section 3.3.5) is proposed to maintain the LOS along Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard. Implementation of Malabar Yard Mitigation Measure TR-3 through TR-5 would minimize operations-related effects related to emergency response and access and evacuation along designated disaster routes.

Additionally, as discussed above under Topic 3.3-B, a potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may also impede access for emergency responders. This is considered an adverse effect. Malabar Yard Mitigation Measure TR-6 minimizes the potential roadway hazard; however, to establish the level of effectiveness of this mitigation measure, further coordination with CPUC and the City of Vernon is required.

Indirect Effects – Construction and Operations

Planned roadway reconfigurations and associated modifications would be coordinated and approved by the City's Public Works Department to ensure adequate access for emergency service providers throughout the traffic study area. Any combination of design options for the Malabar Yard railroad improvements would result in no indirect adverse effect.

TOPIC 3.3-D	Public Transit, Bicycle, or Pedestrian Facilities

Direct Effects – Construction

The construction of any combination of design options for the Malabar Yard railroad improvements would require temporary road closures within the traffic study area and may potentially affect public transit and other non-motorized modes of travel. Construction of any combination of design options would require detour routes and temporary traffic disruptions that may cause decreased performance for transit operators or subject pedestrians and bicyclists to hazardous conditions near work zones. This is considered an adverse effect. However, with implementation of Malabar Yard Mitigation Measure TR-1 (described in Section 3.3.5), which requires the preparation and implementation of a TMP, these impacts would be minimized. As part of the TMP, during planned closures, vehicular, pedestrian, and bicycle traffic would be rerouted to adjacent streets via clearly marked detours and notice would be provided 5 business days in advance of planned closures to applicable parties (emergency service providers, public

transit and bus operators, businesses, and organizers of special events). The TMP will identify proposed closure schedules and detour routes to maintain safe access during construction. With the implementation of Malabar Yard Mitigation Measure TR-1, no direct adverse effect would occur.

Direct Effects – Operations

Either design option for the 46th Street Connector includes installation of new traffic signals, flashers, gates, and new medians, expansion of curb line, sidewalk/ramp, and driveway improvements at existing at-grade crossings on Pacific Boulevard, 46th Street, and Seville Street. As discussed above under Topic 3.3-B, a potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may also cause schedule delays to transit services or disruption of pedestrian and bicycle access. This is considered an adverse effect. Malabar Yard Mitigation Measure TR-6 minimizes the potential roadway hazard; however, to establish the level of effectiveness for this mitigation measure, further coordination with CPUC and the City of Vernon is required.

Indirect Effects – Construction and Operations

Any combination of design options for the Malabar Yard railroad improvements would result in no indirect adverse effect associated with public, transit, bicycle, or pedestrian facilities during construction and operations.

TOPIC 3.3-E	Freight

Direct Effects – Construction

49th Street Closure

During construction of either design options for the 49th Street Closure, freight service would be maintained to the maximum extent possible throughout the construction period. Tracks would be removed in phases to maintain freight access and goods movement north and south of 49th Street. Intermittent and short-term closure of existing tracks may occur to implement track connections. Due to the short-term nature of potential closures and because existing tracks would remain in operation, no direct adverse effect would occur.

46th Street Connector

During construction of either design option for the 46th Street Connector, minor temporary closures of the existing tracks would occur. These closures would be required for short durations of time and would temporarily affect freight customers that are served by existing spur tracks. Due to the temporary nature of potential closures, the timing of closure, and the limited number of customers served by the existing rail lines on 46th Street, no direct adverse effect would occur.

Direct Effects – Operations

Operation of any combination of design options for the Malabar Yard railroad improvements would increase operational efficiency through 2040 for BNSF because local box and tanker train traffic would be redistributed from the north entrance of Malabar Yard to the east entrance (using the new 46th Street Connector) to and from Los Angeles Junction. This would eliminate the need to operate on the same tracks as passenger trains on the heavily congested San Bernardino Line. The increase in operational efficiency is considered a long-term benefit. A beneficial effect would occur.

Indirect Effects – Construction and Operations

Temporary and intermittent closures would not cause indirect effects because local customers could still be served on days where construction would not impede freight rail traffic. If commercial demand increases in the future, BNSF will add train cars to train sets traveling out of the east entrance of Malabar Yard; therefore, train volumes would remain constant through 2040 and no increase in train movements would occur through 2040. Any combination of design options for the Malabar Yard railroad improvements would increase operational efficiency by eliminating the need to operate on the same track as passenger trains. The increase in operational efficiency is considered a long-term benefit. A beneficial effect would occur.

3.3.5 Mitigation Measures

Implementation of the following mitigation measures would avoid or minimize potential adverse effects on transportation during construction and throughout operation of the Malabar Yard railroad improvements. Mitigation measures for the Malabar Yard railroad improvements include “MY” in the nomenclature as shown below.

MY TR-1 **Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements:** During the final engineering phase and at least 30 days prior to implementation of the Malabar Yard railroad improvements, a construction TMP shall be prepared by the contractor and reviewed and approved by Metro and the City of Vernon.

Any identified street closure schedules in the construction TMP shall be approved by the City of Vernon and coordinated among the construction contractor, Metro, BNSF, private businesses, public transit and bus operators, the bicycle community, and emergency service providers to minimize construction-related vehicular and non-vehicular traffic impacts during the peak hour. During planned closures, traffic shall be rerouted to adjacent streets via clearly marked detours and notice shall be provided in 5 business days in advance to applicable parties (emergency service providers, public transit and bus operators, businesses, bicycle community, and organizers of special events). The TMP shall identify proposed closure schedules and detour routes, as well as construction traffic routes, including haul truck routes, and preferred delivery/haul-out locations and hours to avoid heavily congested

areas during peak hours, where feasible and to maintain safe bicycle and pedestrian access during construction. The following provisions shall be included in the TMP:

- Traffic flow shall be maintained, particularly during peak hours, to the degree feasible.
- Access to adjacent businesses shall be maintained during business hours via existing or temporary driveways, as feasible.
- Metro, the City of Vernon, or the contractor shall post advance-notice signs prior to construction in areas where access to local businesses could be affected. Metro shall provide signage to indicate new ways to access businesses and community facilities, if affected by construction.
- Metro shall notify City of Vernon 5 business days in advance of street closures, detours, or temporary lane reductions.

MY TR-2 **Temporary Restriping and Adding a Right-turn Overlap Phase in Westbound Direction of the Vernon Avenue/Santa Fe Avenue Intersection:** During the final engineering phase and at least 30 days prior to implementation of the Malabar Yard railroad improvements, Metro and BNSF shall obtain approval from the City of Vernon to temporarily restripe the westbound shared through/right-turn lane to a westbound right-turn-only lane at Vernon Avenue and add a right-turn overlap phase in the same direction. The temporary restriping shall remain in place for the duration of construction. Upon completion of the Malabar Yard railroad improvements, the lane shall be returned to its original condition as a shared through/right-turn lane and the right-turn overlap phase shall be eliminated.

MY TR-3 **Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection:** During the final engineering phase and at least 30 days prior to implementation of the Malabar Yard railroad improvements, Metro and BNSF shall obtain approval from the City of Vernon to restripe one eastbound through lane to an eastbound turn lane at Vernon Avenue.

MY TR-4 **Restriping of the Pacific Boulevard/Fruitland Avenue Intersection (Future Horizon Year 2040):** In the Future Horizon Year (2040), Metro and BNSF, in coordination with the City of Vernon, shall restripe the northbound shared through/ right-turn lane to a right-turn-only lane and a through lane at Pacific Boulevard.

MY TR-5 **Add a New Vehicular Lane on the Fruitland Avenue Roadway Segment between Santa Fe Avenue and Pacific Boulevard (Future Horizon Year 2040):** In the Future Horizon Year (2040), Metro and BNSF, in coordination with the City of Vernon, shall add a new westbound vehicular lane on Fruitland Avenue.

MY TR-6 **Obtain Required Approvals for At-Grade Railroad Crossings:** For all new and existing at-grade railroad crossing modifications, Metro and BNSF shall obtain

required approvals from the City of Vernon and submit a formal application to the CPUC in accordance with the process outlined in the Rules of Practice and Procedure (effective May 2021). In accordance with the provisions of CPUC Rule 2.4 *CEQA Compliance*, the Formal Application shall include the Link US Final EIR (June 2019) and Final EIS/SEIR.

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3.4 Visual Quality and Aesthetics

This section provides an evaluation of potential effects related to visual quality and aesthetics that may result upon implementation of the Malabar Yard railroad improvements.

3.4.1 Regulatory Framework

Table 3.4-1 identifies and summarizes applicable laws, regulations, and plans relevant to visual quality and aesthetics.

Table 3.4-1. Applicable Laws, Regulations, and Plans for Aesthetics and Visual Quality

Law, Regulation, or Plan	Description
Federal	
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(12)*, 64 *Federal Register* 28545-28556 (1999)[1]	The *FRA's Procedures for Considering Environmental Impacts* indicate that an EIS should identify any significant changes likely to occur in the natural environment and the developed environment. The EIS should also discuss the consideration given to design quality, art, and architecture in project planning and development as required by USDOT Order 5610.4.
National Historic Preservation Act	Section 106 of the NHPA of 1966 requires that federal agencies take into account the effects of their projects on historic properties included in, or eligible for inclusion in, the NRHP. Adverse effects occur when a project "may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association." Examples of adverse effects include "[i]ntroduction of visual … elements that diminish the integrity of the property's significant historic features," which often includes the larger setting and viewshed. Although Malabar Yard railroad improvements are not part of the Link US Project, the potential effects on historic properties that may result from potential mitigation, including effects on visual resources, were considered in the evaluation.
Federal Highway Administration Visual Impact Assessment Guidelines for Highway Projects (1988)	In 1981, FHWA developed a set of VIA guidelines to analyze changes to visual quality caused by the development of federally funded highway projects. The FHWA guidelines were influenced by the visual management systems used by the U.S. Forest Service, the Bureau of Land Management, Natural Resources Conservation Service, the Office of Coastal Zone Management, and other federal agencies. In 1988, the FHWA VIA guidelines were updated from the original 1981 guidelines in response to a growing number of alternative methods being used for visual assessments.

[1] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

Table 3.4-1. Applicable Laws, Regulations, and Plans for Aesthetics and Visual Quality

Law, Regulation, or Plan	Description
Federal Highway Administration Guidelines for the Visual Impact Assessment of Highway Projects (2015)	In January 2015, FHWA released an update to the 1988 VIA guidelines. The 2015 guidance requires a description of a "baseline" and includes provisions for an analysis of scale, form, materials, and overall visual character. One of the key changes in the methodology between the two versions involved the categories used to describe and compare changes in visual quality. The 1988 guidelines utilize "Vividness, Intactness, and Unity" while the 2015 guidelines utilize "Natural Harmony, Cultural Order, and Project Coherence."
State	
Caltrans Scenic Highway Program (1963)	Caltrans oversees the California Scenic Highway Program, which was created in 1963 by California legislature to designate certain portions of the state highway system as state scenic highways for the protection and enhancement of California's natural scenic beauty. The program includes a list of highways that are eligible or have been designated as scenic highways. State Scenic Highways are governed under California Streets and Highways Code, Article 2.5, Sections 260 through 263 and 280 through 284.
Local	
City of Vernon General Plan	The City of Vernon General Plan includes the following policies related to maintaining the industrial use and character of the city: • Policy LU-2.4: Provide incentives to property owners to revitalize industrial structures or recycle/demolish obsolete or vacant structures. • Policy LU-2.5: Assist in the reuse of properties from one industrial use to another.

Notes:
Caltrans=California Department of Transportation; EIS=Environmental Impact Statement; FHWA=Federal Highway Administration; FRA=Federal Railroad Administration; Link US=Link Union Station; USDOT=United States Department of Transportation; VIA=Visual Impact Assessment

3.4.2 Methods for Evaluating Environmental Effects

Topics Considered

For the Malabar Yard railroad improvements, an evaluation was performed to determine if they would affect:

- Visual character or quality; and/or
- Light or glare.

Geographic Area Considered

For the purposes of evaluating visual quality and aesthetics impacts, the Malabar Yard study area was used as a basis to determine where visual resources and viewers/viewer groups are located.

Visual assessment units and key views were used to assess the visual impacts on each of the viewers/viewer groups considered.

Methodology

This assessment was prepared based on guidance outlined in the *Visual Impact Assessment for Highway Projects* (Federal Highway Administration [FHWA] 1988) and the Caltrans's template, modified as needed for this project type. Although FHWA Visual Impact Assessment (VIA) guidelines were updated in 2015, the 1988 FHWA VIA guidelines were used for this evaluation to maintain consistency with the VIA conducted for the Build Alternative (Appendix F of this EIS/SEIR) and the Link US Final EIR, which included an evaluation of visual impacts following the 1988 guidelines. The 1988 FHWA VIA guidelines were used for the Malabar Yard railroad improvements based on the following:

- Project type: The Malabar Yard railroad improvements are a linear transportation feature located mostly within and adjacent to an existing railroad ROW (Malabar Yard and existing freight spur lines).
- Project location and topography: The Malabar Yard railroad improvements are located in a relatively flat but heavily urbanized area with existing transportation infrastructure. Additionally, there are no scenic vistas or scenic highways located near the Malabar Yard study area.
- Consistency with the underlying analysis in the Link US Final EIR: The analysis presented in the Final EIR certified in 2019 is based on the 1988 guidelines. To avoid conflicting analysis, the same methodology was used.

The 2015 guidance describes the initial establishment phase in the VIA process as defining the project's visual character, determining the regulatory context, and defining the area of visual effect. Following this establishment phase, the 2015 guidance includes provisions for assessment of the visual effects using (1) an inventory phase to define the existing status of the affected environment and the affected population and the existing or preferred condition of visual quality and (2) an analysis phase to assess changes to the degree of visual quality as being beneficial or adverse to the relationship viewers have with their visual environment.

Similar to the 2015 guidance, the analysis in this document includes a description of baseline conditions within the affected environment and analyzes the changes in visual quality that would occur with implementation of the Project (see Section 3.4.3 and Section 3.4.4). For these reasons, and because the analysis method and results would not be appreciably different, the 2015 guidance was not used for this analysis.

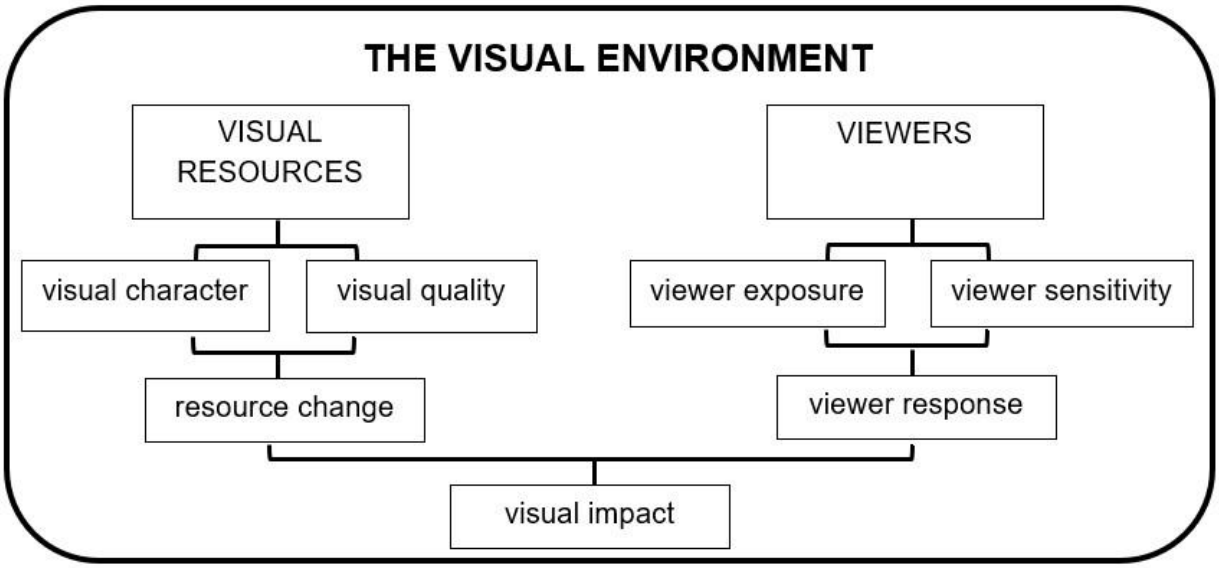
The key changes in the methodology between the 2015 and 1988 guidelines involve the characteristics used to describe and compare changes in visual quality. For instance, the 1988 guidelines use "Vividness, Intactness, and Unity" while the 2015 guidelines use "Natural Harmony, Cultural Order, and Project Coherence." The three criteria are evaluated to assess visual quality

of a project area and it is noted that none of the three by themselves is equivalent to visual quality; all three must be high to indicate high quality.

Vividness is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns, *intactness* is the visual integrity of the natural and man-built landscape and its freedom from encroaching elements, and *unity* is the visual coherence and compositional harmony of the landscape considered as a whole (FHWA 1988). *Natural harmony, cultural order,* and *project coherence* are determined by viewing the character of the visual resources of the natural environment through the lens of viewer preferences—the greater the degree to which the natural visual resources of the area of visual effect meet the viewer's preferred concept of natural harmony, cultural order, or project coherence, the higher value the viewer places on those visual resources (FHWA 2015). The analysis using the 1988 guidelines captures similar qualities that the 2015 guidelines would, only with different descriptors. The visual and aesthetic environment of the Malabar Yard study area remains topographically flat and heavily urbanized and the difference in analysis language between the 1988 and 2015 guidelines would not affect any of the impact conclusions in this document.

Following FHWA's 1988 methodology, visual effects are determined by assessing changes to the visual resources and predicting viewer response to those changes. Figure 3.4-1 depicts a generalized VIA process.

Figure 3.4-1. Federal Highway Administration Visual Impact Assessment Process Concept Diagram



Source: Federal Highway Administration 1988

The following steps were taken to determine potential visual effects:

1. Defining the location and setting.
2. Identifying existing visual resources, viewers, and viewer groups.

3. Identifying visual assessment units and key viewpoints.
4. Assessing resource change and viewer response.
5. Analyzing context and intensity of visual effects of the Malabar Yard improvements.

Defining Project Location and Setting

The setting considers existing landscape constraints (landform and land cover) and the physical limits of human sight as it relates to the location, proximity, and quantity and quality of light of the viewer.

Identifying Existing Visual Resources, Viewers, and Viewer Groups

For the purpose of this evaluation, visual resources correspond to each of the visual assessment units evaluated. Viewers and viewer groups considered include neighbors (business owners/employees and business patrons) and users (commuters).

Visual resources and the associated viewers/viewer groups are described below.

- 46th Street (business owners/employees/patrons, commuters).
- 49th Street (business owners/employees/patrons, commuters).

Identify Visual Assessment Units and Key Views

The Malabar Yard study area was divided into visual assessment units. The visual assessment units are focused on areas that would be subject to the most visually dominant features of the Malabar Yard railroad improvements in conjunction with land uses, buildings, transportation facilities, etc. Each visual assessment unit has its own visual character and visual quality. Several key views were selected within each visual assessment unit that would most clearly illustrate the resulting change to visual resources, if any. Key views also represent the viewer groups that have the highest potential to be affected by the Malabar Yard railroad improvements, considering exposure and sensitivity.

For this evaluation, two visual assessment units and five key views were identified. The locations of key views for each visual assessment unit are described/depicted in detail in the discussion of the affected environment (Section 3.4.3).

Preliminary identification of key views was conducted using aerial mapping and preliminary engineering plans of the Malabar Yard railroad improvements to determine where visual changes would occur based on the anticipated viewer groups at these locations. Viewpoint locations were verified in the field during a site visit in May 2020 and reconfirmed during a site visit in February 2023. At that time, multiple photographs were taken at each viewpoint location. To best represent the existing visual character and potential visual changes, the photographs were evaluated against plans for the Malabar Yard railroad improvements. Final photographs were selected for their locations and angles and their overall representation of key views and viewer groups.

Assessing Resource Change and Viewer Response

Resource change is assessed by evaluating the visual character and the visual quality of the visual resources, and viewer response is assessed by evaluating the change in viewer exposure and sensitivity. The overall level of resource change and viewer response was qualitatively assessed by assigning one of five resource change levels—low, moderately low, moderate, moderately high, or high—to provide a reference for determining levels of visual impact by combining resource change and viewer response. See Table 3.4-2.

Table 3.4-2. Visual Impact Using Resource Change and Viewer Response

Resource Change	Viewer Response				
	Low	Moderately Low	Moderate	Moderately High	High
Low	Low	Moderately Low	Moderately Low	Moderate	Moderate
Moderately Low	Moderately Low	Moderately Low	Moderate	Moderate	**Moderately High**
Moderate	Moderately Low	Moderate	Moderate	**Moderately High**	**Moderately High**
Moderately High	Moderate	Moderate	**Moderately High**	**Moderately High**	**High**
High	Moderate	**Moderately High**	**Moderately High**	**High**	**High**

Source: Federal Highway Administration 1988
Notes:
Bold indicates when an adverse effect may occur.

Visual Character

Visual character includes the following attributes—form, line, color, texture, dominance, scale, diversity, and continuity—used for description purposes, not for evaluation purposes:

- **Form –** visual mass and shape.
- **Line –** edges or linear definition.
- **Color –** reflective brightness (light, dark) and hue (red, green).
- **Texture –** surface coarseness.
- **Dominance –** position, size, or contrast.
- **Scale –** apparent size as it relates to the surroundings.
- **Diversity –** a variety of visual patterns.

- **Continuity –** uninterrupted flow of form, line, color, or textural pattern.

Visual Quality

Visual quality within the Malabar Yard study area is described based on existing visual character, viewer groups, and expected community preferences. Community preferences were gathered during the public outreach process when stakeholder feedback was received throughout the environmental process. Visual quality is evaluated by identifying the vividness, intactness, and unity present in the Malabar Yard study area. The three criteria for evaluating visual quality are:

- **Vividness –** the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements.
- **Intactness –** the integrity of visual features in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions.
- **Unity –** the extent to which all visual elements combine to form a coherent, harmonious visual pattern.

Viewer Exposure

Viewer exposure is a measure of the viewer's ability to see a particular object. Viewer exposure has three attributes: location, quantity, and duration. Location relates to the position of the viewer in relationship to the object being viewed. The closer the viewer is to the object, the more the exposure. Quantity refers to how many people see the object. The more people who can see an object or the greater frequency with which an object is seen, the more exposure the object has to viewers. Duration refers to how long a viewer sees an object. The longer an object is kept in view, the more the exposure. High viewer exposure helps predict viewers who would have a response to a visual change such as those viewers that are residents and recreationists. Low viewer exposure exists when few viewers experience a defined view or when viewers such as commuters are passing by and not as concerned with the view.

Viewer Sensitivity

Viewer sensitivity is a measure of the viewer's recognition of a particular object. Viewer sensitivity has three attributes (activity, awareness, and local values), described below.

- Activity relates to the preoccupation of viewers, whether they are doing something else or are engaged in observing their surroundings. The more they are observing their surroundings, the more sensitivity viewers would have to changes in visual resources.
- Awareness relates to the focus of view. Whether the focus is wide and the view general, or the focus is narrow and the view specific. The more specific the awareness, the more sensitive a viewer is to change.
- Local values and attitudes also affect view sensitivity. If the viewer group values aesthetics in general or if a specific visual resource has been protected by local, state, or national designation, it is likely that viewers would be more sensitive to visible changes.

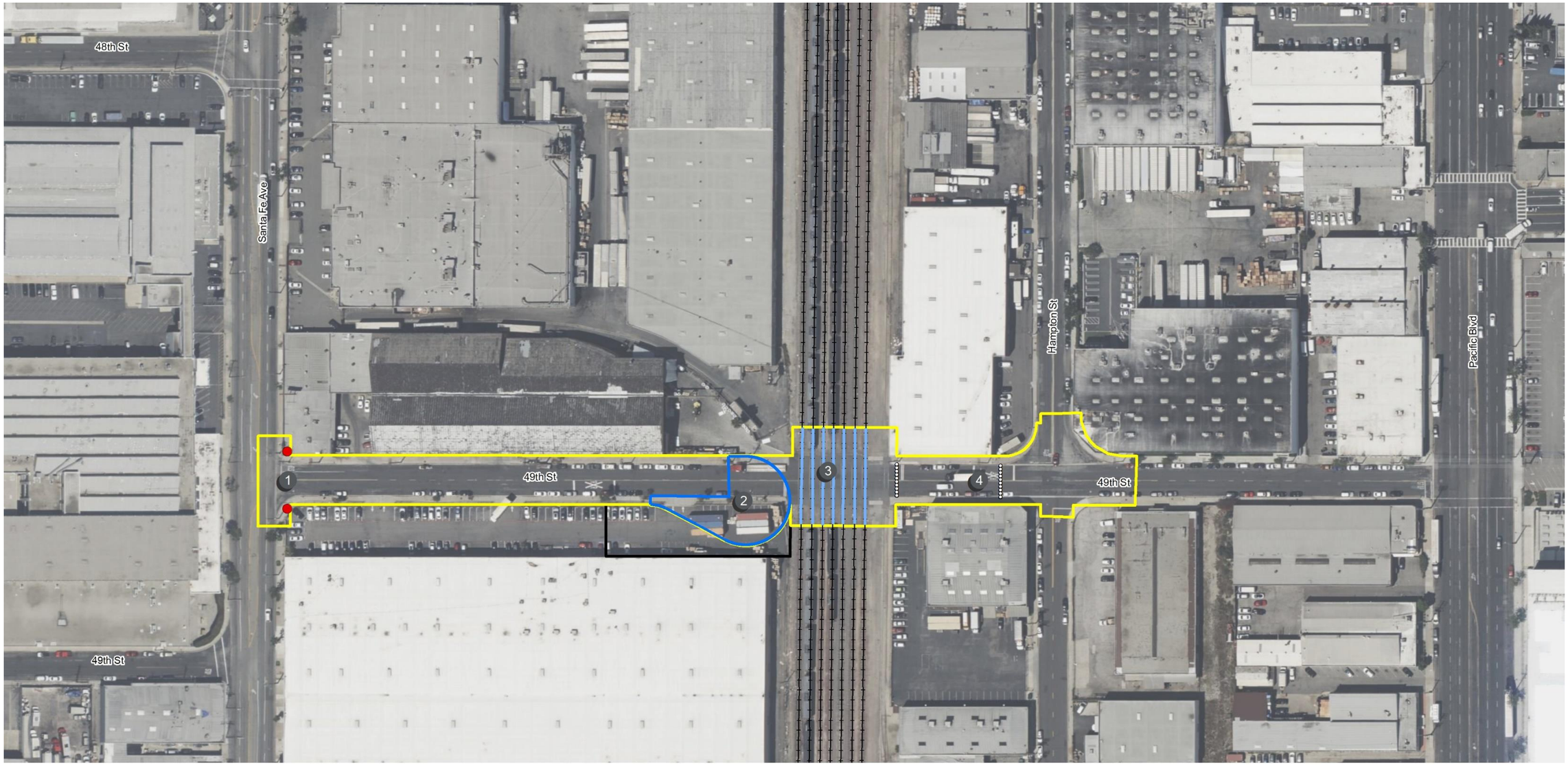
High viewer sensitivity, assessed qualitatively, helps predict if viewers would have a high concern for a visual change.

For this evaluation, resource change is assessed by evaluating the visual character and the visual quality of the visual resources in the Malabar Yard study area before and after construction of the Malabar Yard railroad improvements. As described in Section 2.0, Description of Malabar Yard Railroad Improvements, the railroad improvements would include closure of the at-grade railroad crossing at 49th Street and an approximately 1,000-foot segment of new track connection along 46th Street.

As shown in Figure 3.4-2, the major components associated with the 49th Street Closure Design Option 1 include: a new offset cul-de-sac west of the tracks, replacement of a portion of each track at the existing at-grade crossing and closure of 49th Street at Hampton Street, installation of removable bollards east of the tracks, and new signage. As shown in Figure 3.4-3, the major difference between Design Option 1 and Design Option 2 for the 49th Street Closure is the configuration of the roadway west of the railroad tracks at Malabar Yard. East of Santa Fe Street, Design Option 2 would facilitate future turning movements on 49th Street by allowing for maneuvering of vehicles and large trucks in a hammerhead configuration.

As shown in Figure 3.4-4, the major components associated with the 46th Street Connector Design Option 1 include: a new approximately 1,000-foot connector track, a realigned spur track, one new at-grade public crossing, one new at-grade private crossing, and enhancement of three existing at-grade crossings. As shown in Figure 3.4-5, the major difference between Design Option 1 and Design Option 2 for the 46th Street connector is the configuration of the approximately 1,000-foot track alignment between Pacific Boulevard and Seville Avenue. East of the existing spur line that would be realigned, Design Option 2 would facilitate future train movements along 46th Street via a track alignment configuration further north within the roadway limits of 46th Street when compared to Design Option 1.

Figure 3.4-2. Malabar Yard 49th Street Closure Design Option 1 (Offset Cul-de-Sac) – Major Components and Project Footprint



LEGEND

- Permanent Impacts
- Temporary Impacts
- Track Replacement (no new tracks)
- Existing Track
- Proposed Cul-de-sac
- Proposed Removable Bollard
- Proposed Sign

1. New Signage
2. New Offset Cul-de-sac
3. Track Replacement
4. Full Street Closure at Hampton St. Proposed Removable Bollards, Removal of On Street Parking

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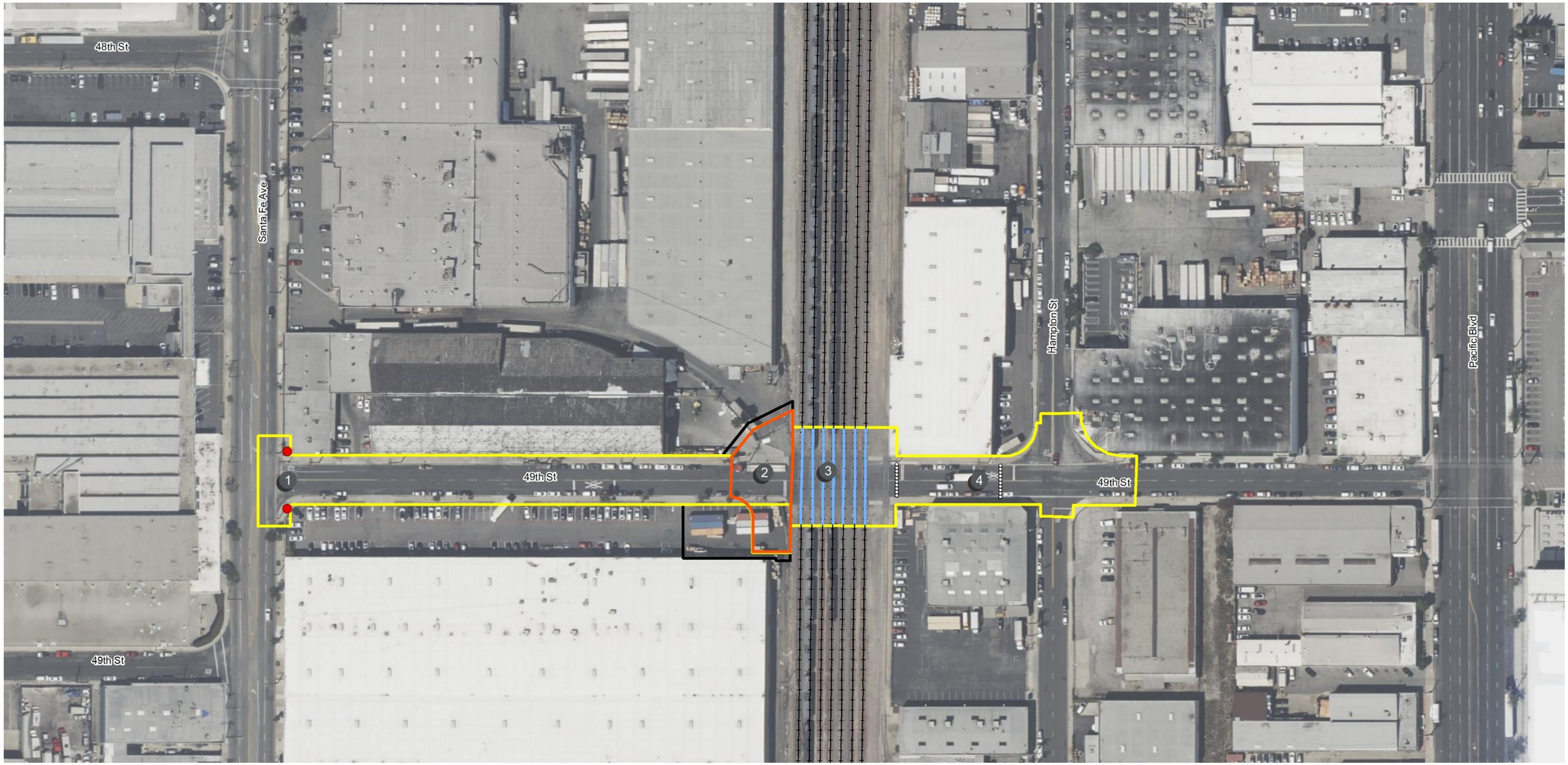
Figure 3.4-3. Malabar Yard 49th Street Closure Design Option 2 (Hammerhead Cul-de-Sac) – Major Components and Project Footprint



LEGEND

- Permanent Impacts
- Temporary Impacts
- New Hammerhead Cul-de-Sac
- Track Replacement (no new tracks)
- Existing Track
- Proposed Removable Bollard
- Proposed Sign

1. New Signage
2. New Hammerhead Cul-de-Sac
3. Track Replacement
4. Full Street Closure at Hampton St. Proposed Removable Bollards, Removal of On Street Parking

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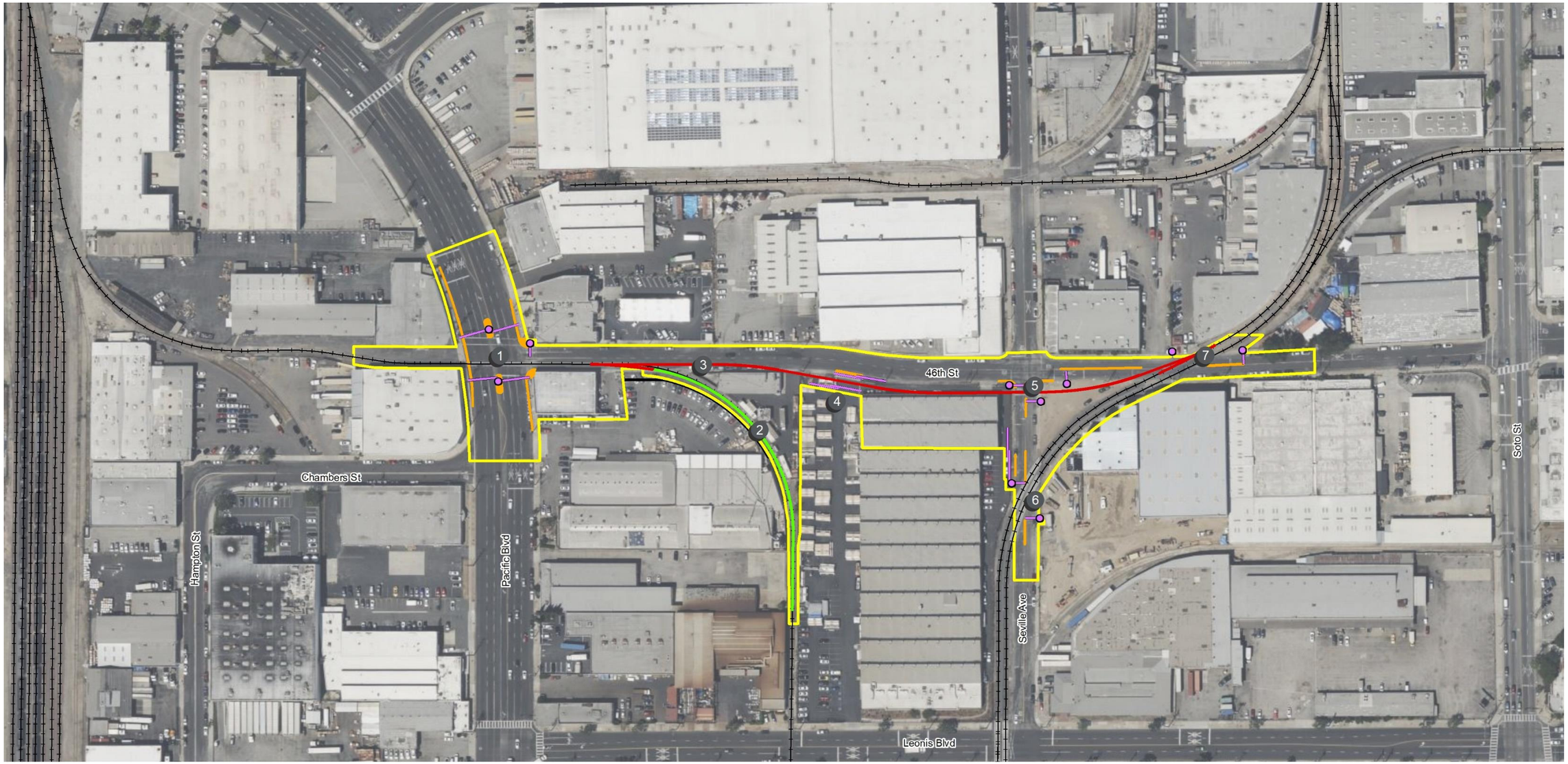
Figure 3.4-4. Malabar Yard 46th Street Connector Design Option 1 (Southern Alignment) – Major Components and Project Footprint



LEGEND

- Permanent Impacts
- Temporary Impacts
- Proposed Curb and Median
- Proposed New Track
- Realigned Spur Track
- Existing Track
- Proposed Traffic/Railroad Gate
- Flasher

1. Existing At-Grade Crossing Enhancement - Pacific Blvd.
   - New Traffic/RR Signals, Flashers and Gates
   - New Medians/Curbline and Roadway Reconfiguration
   - Removal of On Street Parking at Intersection
2. Realigned Spur Track
3. 46th St Connector Track
4. New At-Grade Crossing, with Automatic Sliding Gates, for Business Egress
5. New At-Grade Crossing - Seville St.
   - New Traffic/RR Signals, Flashers and Gates
   - New Medians/Curbline and Roadway Reconfiguration
6. Existing At-Grade Crossing Enhancement - Seville St.
   - New RR Signals, Flashers and Gates
   - New Medians/Roadway Reconfiguration
   - New Driveway with Automatic Sliding Gates for Business Egress
7. Existing At-Grade Crossing Enhancement - 46th St.
   - New RR Signals, Flashers and Gates
   - New Medians\Roadway Reconfiguration
   - Removal of On Street Parking

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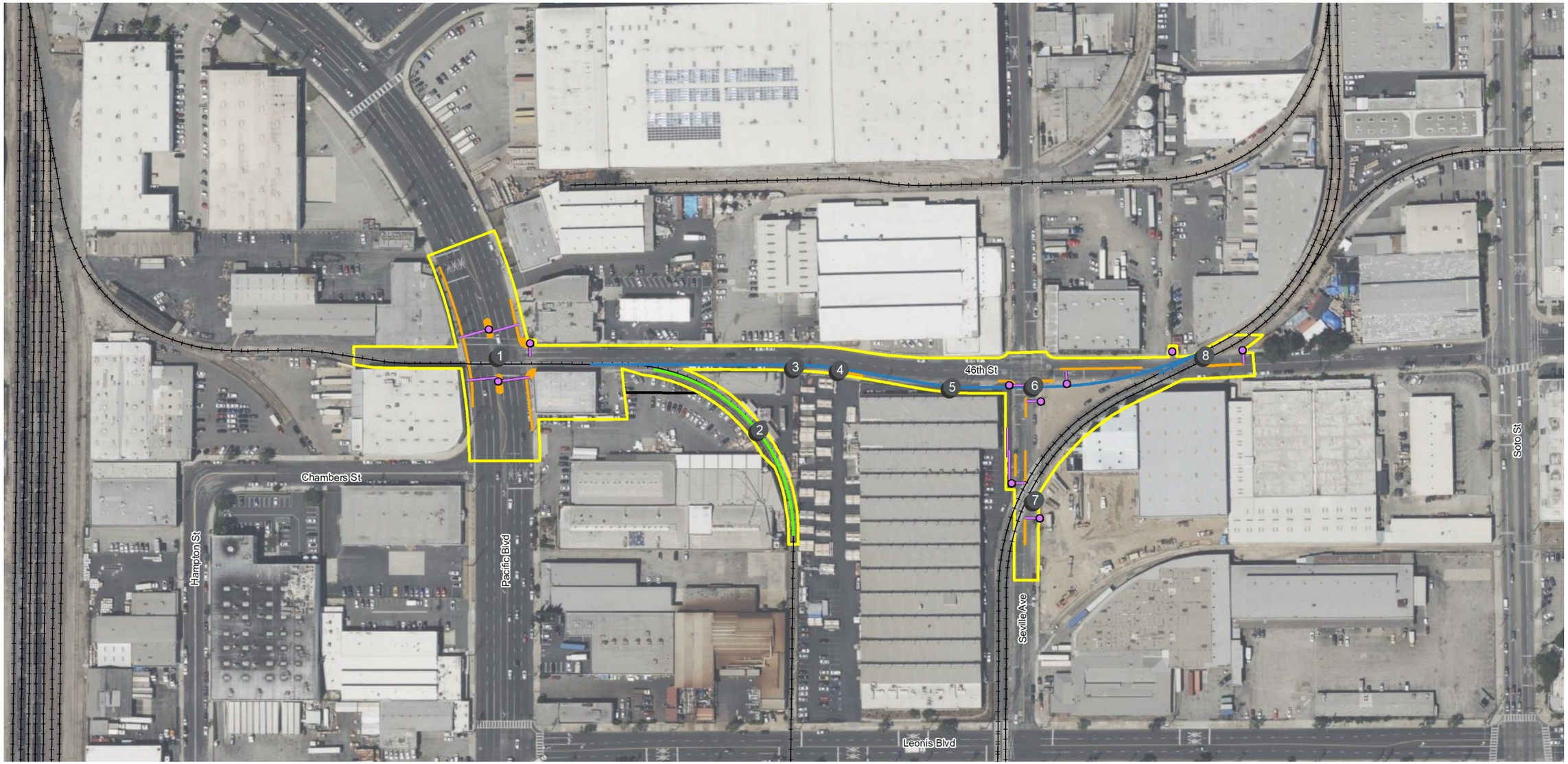
Figure 3.4-5. Malabar Yard 46th Street Connector Design Option 2 (Northern Alignment) – Major Components and Project Footprint



LEGEND

- Permanent Impacts
- Temporary Impacts
- Proposed Curb & Median
- Proposed New Track
- Realigned Spur Track
- Proposed Traffic/Railroad Gate
- Existing Track
- Flasher

1. Existing At-Grade Crossing Enhancement - Pacific Blvd.
   - New Traffic/RR Signals, Flashers and Gates
   - New Medians/Curbline and Roadway Reconfiguration
   - Removal of On Street Parking at Intersection
2. Realigned Spur Track
3. At-Grade Private Crossing for Business Egress
4. Two At-Grade Private Crossings for Business Egress
5. 46th St Connector Track
6. New At-Grade Crossing - Seville St.
   - New Traffic/RR Signals, Flashers and Gates
   - New Medians/Curbline and Roadway Reconfiguration
7. Existing At-Grade Crossing Enhancement - Seville St.
   - New RR Signals, Flashers and Gates
   - New Medians/Roadway Reconfiguration
   - New Driveway with Automatic Sliding Gates for Business Egress
8. Existing At-Grade Crossing Enhancement - 46th St.
   - New RR Signals, Flashers and Gates
   - New Medians\Roadway Reconfiguration
   - Removal of On Street Parking

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Analyzing Context and Intensity of Visual Effects of the Malabar Yard Improvements

Visual Impacts

Visual impacts (synonymous with effects) can be beneficial or adverse, and would occur when the level of resource change, combined with the level of viewer response, is moderately high or high:

- **Beneficial Visual Effect:** Beneficial effects would occur if proposed improvements either enhance views within a visual assessment unit by improving visual quality or character or result in a positive viewer response.
- **Adverse Visual Effect:** Adverse effects would occur if proposed improvements either diminish views within a visual assessment unit by degrading visual quality or character or result in a negative viewer response.

Light and Glare Impacts

Light and glare impacts are typically related to the extent of light spill and glare effects on nearby drivers and land uses. The light emissions and potential glare from proposed improvements, including nighttime construction activities (resource change) are compared to baseline conditions to determine if increases in light or glare would result in undesired exposure or disruption of normal activities (viewer response).

3.4.3 Affected Environment

The affected environment can be characterized as an urban, developed area with a heavy presence of transportation, industrial, and commercial land uses. For this evaluation, two visual assessment units and five key viewpoints or "key views" were identified (Table 3.4-3). Figure 3.4-6 shows the locations of key views for each visual assessment unit.

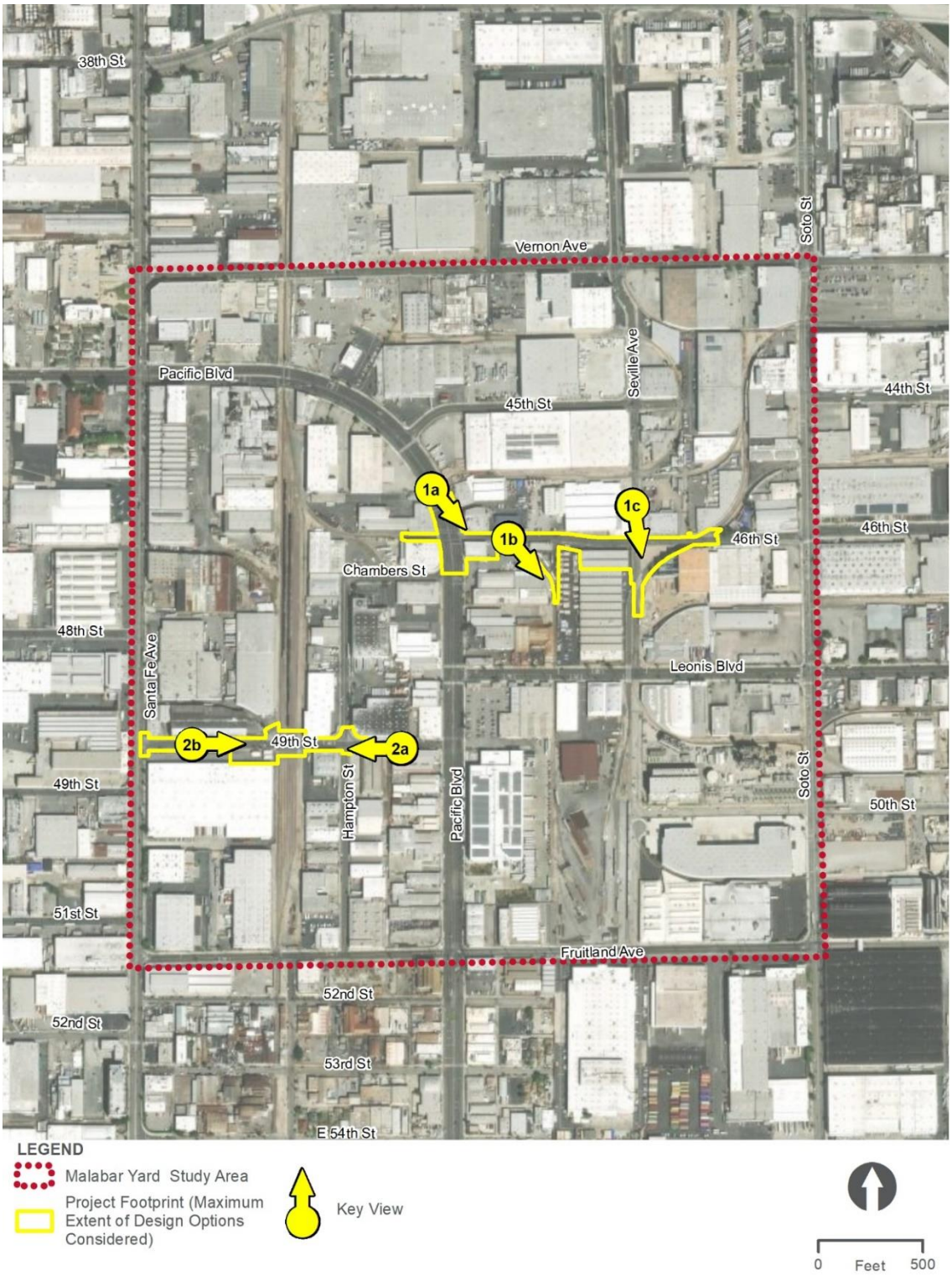
Table 3.4-3. Visual Assessment Units and Key Views for the Malabar Yard Study Area

Visual Assessment Unit and Viewer Group Represented	Key View Number	Key View Description
Figure 3.4-7 #1: 46th Street (Business Owners/Employees/Patrons, Commuters)	1a	46th Street at Pacific Boulevard (view looking southeast)
	1b	Existing Spur Track between Pacific Boulevard and Seville Avenue (view looking southeast)
	1c	Seville Avenue northwest of the existing rail line (view looking southwest)

Table 3.4-3. Visual Assessment Units and Key Views for the Malabar Yard Study Area

Visual Assessment Unit and Viewer Group Represented	Key View Number	Key View Description
Figure 3.4-10 #2: 49th Street (Business Owners/Employees/Patrons, Commuters)	2a	49th Street near existing rail crossing (view looking west)
	2b	49th Street near existing rail crossing (view looking east)

Figure 3.4-6. Key View Map



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Visual Assessment Unit #1: 46th Street

Key Views

Visual Assessment Unit #1 represents business owners/employees/patrons, and commuters along 46th Street between Pacific Boulevard and Seville Avenue. Three key views were chosen along 46th Street to determine where visual changes may result from the 46th Street Connector.

- Key View #1a is located on 46th Street at Pacific Boulevard, in front of a commercial building facing southeast (Figure 3.4-7).
- Key View #1b is located on 46th Street along the existing spur track between Pacific Boulevard and Seville Avenue, facing southeast (Figure 3.4-8).
- Key View #1c is located on Seville Avenue near 46th Street, in front of a commercial building, facing south (Figure 3.4-9).

Figure 3.4-7. Key View #1a: 46th Street at Pacific Boulevard (View Looking Southeast)

Figure 3.4-8. Key View #1b: Existing Spur Track between Pacific Boulevard and Seville Avenue (View Looking Southeast)

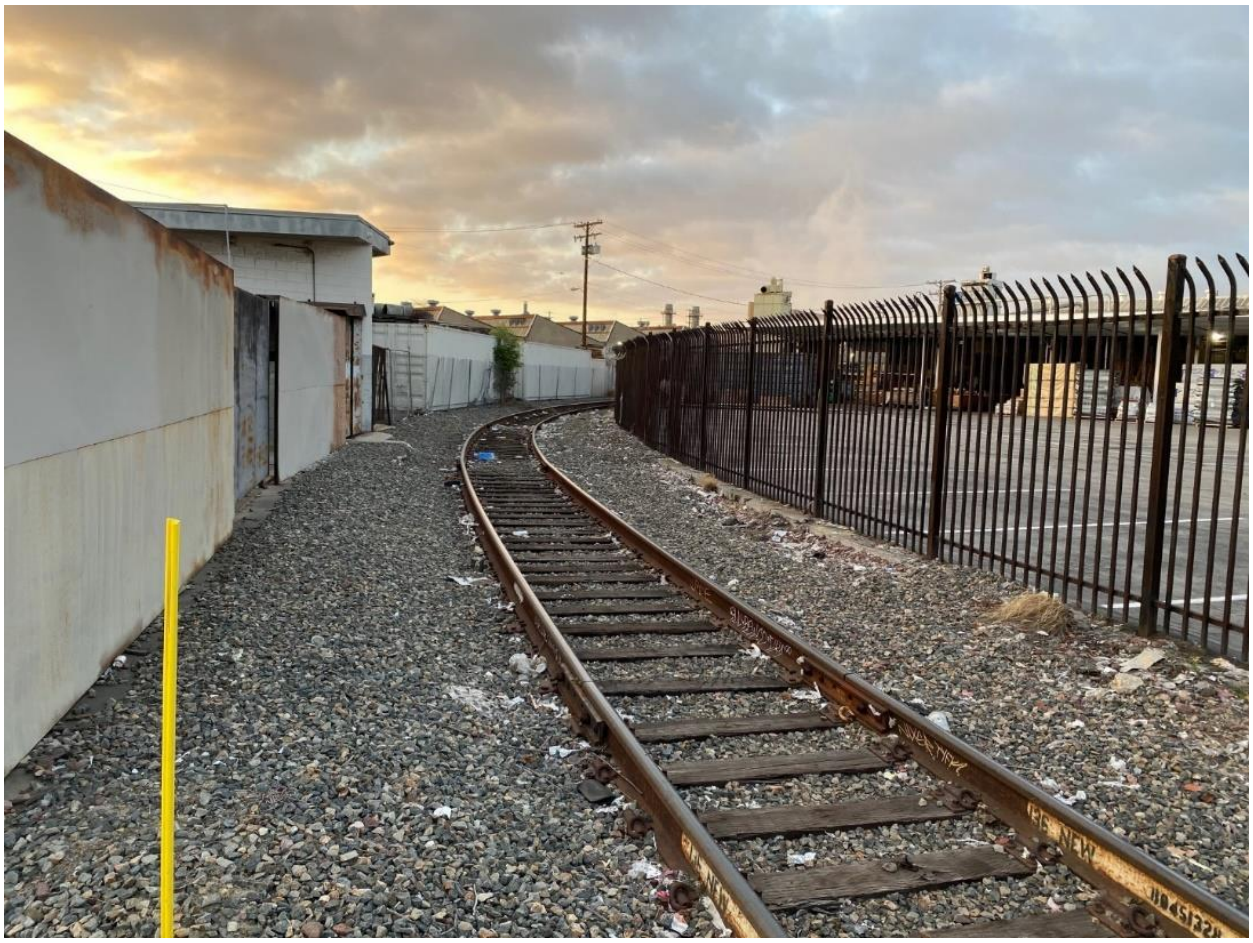

Figure 3.4-9. Key View #1c: Seville Avenue (Looking South toward 46th Street)

Visual Character

Visual Assessment Unit #1 has industrial and commercial land uses that are clustered close together and reflects the urbanized industrial character that exists within the city. Within Visual Assessment Unit #1, buildings are one to two stories high, rectangular in shape, and are made of brick and stucco materials. The majority properties are devoid of landscaping; however, some buildings contain ornamental landscaping such as grass, low-lying bushes, and palm trees. Linear features that traverse this visual assessment unit include railroad tracks, telephone poles, and overhead power lines.

The visual character of Visual Assessment Unit #1 is that of an established high-density industrial development within an urban industrial setting. The surrounding streets, telephone phones, overhead power lines, commercial/industrial buildings, and railroad tracks are also linear in form. Within Visual Assessment Unit #1 the buildings are relatively close together and the streets are narrow.

Visual Quality

The primary views within Visual Assessment Unit #1 are of other buildings and the streetscape. Facing east along 46th Street, the views are of industrial and manufacturing uses. There are views of the roadway corridor, various industrial and manufacturing uses, and existing rail lines. Due to the industrial nature of Visual Assessment Unit #1 and lack of visual resources, the overall visual quality is low.

Visual Assessment Unit #2: 49th Street

Key Views

Visual Assessment Unit #2 represents business owners/employees/patrons, and commuters along 49th Street between Santa Fe Avenue and Hampton Street. Two key views were chosen along 49th Street to determine where visual changes may result from the 49th Street Closure.

- Key View #2a is located on 49th Street near the existing rail crossing, in front of a commercial building, facing west (Figure 3.4-10).
- Key View #2b is located on 49th Street near the existing rail crossing, in front of a commercial building, facing east (Figure 3.4-11).

Visual Character

Visual Assessment Unit #2 has industrial and commercial land uses that are clustered close together and reflect the urban character that exists within the city. Within Visual Assessment Unit #2, warehouse buildings are at least two stories high, rectangular in shape, and are made of brick and concrete materials. The properties are devoid of landscaping. Linear features that traverse this visual assessment unit include telephone poles, overhead power lines, and railroad tracks. Additionally, there is a historic-era rail signaling pole in the foreground of Key View #2a.

The visual character of Visual Assessment Unit #2 is that of an established high-density industrial development within an urban industrial setting. The surrounding streets, power lines, commercial/industrial buildings, and train tracks are also linear in form. Within Visual Assessment Unit #2, the buildings are relatively close together and the streets are narrow.

Visual Quality

Visual Assessment Unit #2 consists of industrial and manufacturing uses. The area surrounding Visual Assessment Unit #2 consists of industrial uses, commercial manufacturing uses, and rail lines. Due to the industrial nature of Visual Assessment Unit #2 and lack of visual resources, the overall visual quality is low.

Light and Glare

The Malabar Yard study area is in an urban area with multiple sources and types of lighting typically associated with commercial and industrial uses. Existing lighting occurs in the form of overhead streetlights, building lighting, railroad signal flashers, and railcars.

Figure 3.4-10. Key View #2a: 49th Street on East Side of Malabar Yard (View Looking West)

Figure 3.4-11. Key View #2b: 49th Street on West Side of Malabar Yard (View Looking East)

3.4.4 Environmental Consequences

No Action Evaluation

The following topics were evaluated to determine potential effects if the Malabar Yard railroad improvements in the City of Vernon were not implemented in conjunction with the Build Alternative.

Visual Character or Quality

If the Malabar Yard railroad improvements were not to be implemented, no change to existing visual character and quality would occur. Therefore, no direct or indirect effects related to visual quality and aesthetics are anticipated to occur.

Light or Glare

If the Malabar Yard railroad improvements were not to be implemented, no change to existing lighting would occur. Therefore, no direct or indirect effects related to light or glare are anticipated to occur.

Evaluation of Malabar Yard Railroad Improvements

TOPIC 3.4-A	Visual character or quality

Direct Effects – Construction

Construction activities for any combination of design options for the Malabar Yard railroad improvements would introduce heavy equipment and associated vehicles, including backhoes, compactors, tractors, cranes, and trucks, into the views of all viewer groups. Construction activities would include earthwork, track and civil work, utility relocations, rail crossing demolition and construction, and associated truck hauling and other material and equipment movement and storage, all of which would be highly visible in any given area. Construction activities may also involve the use of temporary structures (e.g., trailers, fencing, or parking) within designated staging areas. Conventional methods would be used to construct the Malabar Yard railroad improvements.

Construction activities would cease after completion and the effects from these activities are considered a temporary resource change because no permanent changes to any of the visual assessment units considered would occur. Due to the urbanized and developed condition of the Malabar Yard study area, the existing visual quality is low. Although viewers would be exposed to construction activities, vehicles, equipment, and machinery, the visual resource change would be considered low because the visual character would not be substantially different than existing conditions. Depending on the viewers location, viewers could be exposed to construction staging areas and equipment within an already highly urbanized area. Viewer groups located along the railroad corridor are likely to be accustomed to seeing construction vehicles and equipment within the Malabar Yard study area because of existing and ongoing rail maintenance activities. Construction sites and staging areas would also be screened from the public as project specifications include provisions that require fencing, tarp, and/or wood boarding to provide additional visual protection to minimize exposure to viewer groups in the area. Furthermore, construction activities, vehicles, equipment, and machinery would no longer be visible to viewer groups (business owners/employees/patrons and commuters) after construction is complete, and all staging areas would be restored to pre-Project conditions; thereby eliminating all exposure to these elements after construction is complete. No direct adverse effect would occur.

Direct Effects – Operations

Once operational, built elements that are currently present in Visual Assessment Units #1 and #2 would remain, including trains, tracks, grade crossings, and commercial- and industrial-related structures. Any combination of design options for the Malabar Yard railroad improvements would cause a resource change in Visual Assessment Units #1 and #2. In Visual Assessment Unit #1, additional medians and other safety enhancements would be constructed to ensure safe operation of at-grade crossings. The movement of train cars would be temporarily visible along an approximately 1,000-foot segment of 46th Street within Visual Assessment Unit #1. However, because of their limited frequency and duration, existing intervening development, and the established presence of other railroad infrastructure, increased train operations along 46th Street

are not expected to contribute to substantial visual quality effects. Within Visual Assessment Unit #2, the closure of 49th Street and conversion of a through street to a dead end or cul-de-sac on both sides of an existing rail yard would introduce a minor change in view of the area as new fencing and bollards would be constructed to limit vehicular traffic through the area.

The Malabar Yard railroad improvements would occur in an area that contains primarily commercial and industrial uses with existing railroad infrastructure in the immediate vicinity. The visual resource change would be considered low because the visual character would not be substantially different than existing conditions. Viewer response would be moderately high for business owners/employees/patrons because exposure to the resource change would be short term when business owners/employees/patrons arrive and/or leave; however, exposure would be often, potentially daily. As shown in Table 3.4-2, a low level of resource change combined with a moderately high level of viewer response would result in a moderate visual impact. Viewer response would be moderate for commuters because they would also be exposed to the resource change on a frequent basis, although for shorter duration of time. As shown in Table 3.4-2, a low-level resource change combined with a moderate level of viewer response would result in a moderately low visual impact. Based on these considerations, no direct adverse effect would occur.

Indirect Effects – Construction and Operations

Construction activities for any combination of design options for the Malabar Yard railroad improvements would be localized and would not extend outside the Project footprint for the design options considered, and no temporary construction activities would cause indirect effects. The 46th Street Connector would cause additional trains to be visible as they traverse the city in an east/west direction to and from the Los Angeles Junction and Malabar Yard; however, trains already run along existing tracks along 46th Street and no change is expected to occur beyond the immediate area. No indirect effect would occur.

TOPIC 3.4-B	Light or glare

Direct Effects – Construction

During nighttime construction activities, temporary lighting may be used at discrete locations for certain activities required to construct any combination of design options for the Malabar Yard railroad improvements. The Malabar Yard study area is in an urban area with multiple sources and types of lighting typically associated with commercial and industrial uses. The use of construction lighting during nighttime hours would be temporary and placed in select locations where work is occurring. Short-term light and glare effects are not expected to be a visual nuisance because construction would not be located near any visual resources or light-sensitive receptors, such as recreationists or residents. No direct adverse effect would occur.

Direct Effects – Operations

Following completion of construction, light and glare would not be substantially different than existing conditions. For any combination of design options for the Malabar Yard railroad improvements, new flashers would be installed at Pacific Boulevard and 46th Street, Seville Avenue and 46th Street, and 46th Street between Seville Avenue and Soto Street. However, the Malabar Yard railroad improvements would be in an urban area that already has a large amount of existing lighting from railroad, commercial, and industrial uses. The improvements would not expose viewers to higher levels of lighting that could disrupt normal activities during nighttime hours. Aside from the new signal flashers for safety purposes, no new lighting is proposed throughout operations. Based on these considerations, no direct adverse effect would occur.

Indirect Effects – Construction and Operations

Construction lighting would not cause new sources of light or glare that could disrupt normal activities within the Project footprint for the design options considered or adjacent thereto. Signal lighting would be designed to maximize safety and shielded as necessary. No indirect adverse effect would occur.

3.4.5 Mitigation Measures

Construction and operation of any combination of design options for the Malabar Yard railroad improvements would not result in adverse visual effects. Therefore, no mitigation is required.

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3.5 Air Quality and Global Climate Change

This section provides an evaluation of the potential effects related to air quality and global climate change that may result upon implementation of the Malabar Yard railroad improvements.

3.5.1 Regulatory Framework

Table 3.5-1 identifies and summarizes applicable laws, regulations, and plans relative to air quality and global climate change.

Table 3.5-1. Applicable Laws, Regulations, and Plans for Air Quality and Global Climate Change

Law, Regulation, or Plan	Description
Federal	
Corporate Average Fuel Economy Standards (2022)	The latest CAFE standards require an industry-wide fleet average of approximately 49 mpg for passenger cars and light trucks in model year 2026. The new standards will increase fuel efficiency by 8 percent annually for model years 2024-2025 and 10 percent annually for model year 2026. They will also increase the estimated fleetwide average by nearly 10 mpg for model year 2026, relative to model year 2021. These standards for 2024-2026 will reduce fuel use by more than 200 billion gallons through 2050 as compared to the old standards.
Executive Order 14057– Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability (2021)	As signed on December 8, 2021, EO 14057 requires agencies to: • Achieve 100 percent carbon pollution-free electricity by 2030, including 50 percent on a 24/7 basis. • Reach 100 percent zero-emission vehicle acquisition by 2035, including 100 percent light-duty acquisitions by 2027. • Achieve net-zero building emissions by 2045, including a 50 percent reduction by 2032. • Reduce Scope 1 and 2 GHG emissions by 65 percent from 2008 levels by 2030. • Establish targets to reduce energy and potable water use intensity by 2030. • Reduce procurement emissions to net-zero by 2050. • Have climate-resilient infrastructure and operations. • Develop a climate- and sustainability-focused workforce. • Advance EJ and equity-focused operations. • Accelerate progress through domestic and international partnerships.
Final Endangerment and Cause or Contribute Findings for Greenhouse Gases (2009)	As a result of *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that GHGs are air pollutants covered by the FCAA. Therefore, U.S. EPA must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare. On April 17, 2009, the U.S. EPA Administrator signed proposed endangerment and cause or contribute findings for GHGs under Section 202(a) of the Clean Air Act. U.S. EPA published final Findings on December 7, 2009.

Table 3.5-1. Applicable Laws, Regulations, and Plans for Air Quality and Global Climate Change

Law, Regulation, or Plan	Description
National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change (2023)	The CEQ[1] issued an interim guidance on January 9, 2023, to assist agencies in analyzing GHG and climate change effects of their proposed actions under NEPA. This guidance aligns the depth of analysis proportional with the project's impacts, clarifies best practices for analysis, incorporates EJ considerations, introduces the social cost of GHGs, and encourages agencies to mitigate GHG impacts. This guidance is consistent with EO 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*.
Federal Clean Air Act (42 United States Code § 7401 et seq.) (1963)	The FCAA, enacted in 1963, established NAAQS, known as NAAQS, and defines nonattainment areas as geographic regions designated as not meeting one or more of the NAAQS. Attainment areas are areas with concentrations of criteria pollutants that are below the levels established by the NAAQS. The FCAA also requires an SIP be prepared for local areas not meeting these standards (nonattainment area) and a maintenance plan be prepared for each former nonattainment area that subsequently demonstrated compliance with the standards. NAAQS and state ambient air quality standards have been established for transportation-related criteria pollutants that have been linked to potential health concerns: CO, NO_2, O_3, particulate matter (which is broken down for regulatory purposes into PM_{10} and $PM_{2.5}$), and SO_2. The FCAA requires U.S. EPA to designate areas as attainment, nonattainment, or maintenance (previously nonattainment and currently attainment) for each criteria pollutant based on whether the NAAQS have been achieved.
General Conformity Rule (40 Code of Federal Regulations 93 Subpart B) (2010)	U.S. EPA General Conformity Rule (40 CFR 93 Subpart B) applies to federal actions, other than those related to highway and transit planning and projects, that result in emissions of criteria pollutants, or their precursors, in federally designated nonattainment or maintenance areas. The emissions thresholds that trigger requirements of the General Conformity Rule for federal actions emitting nonattainment or maintenance pollutants, or their precursors, are called *de minimis* levels. The general conformity *de minimis* thresholds are defined in 40 CFR 93.153(b).
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(1)*, 64 *Federal Register*	The FRA's Environmental Procedures require the draft and final EISto include an assessment of the consistency of the alternatives with federal and state plans for the attainment and maintenance of air quality standards.

[1] Although interim guidance was issued in 2023, this environmental document was initiated prior to the effective date and is not subject to the new regulations and relies on the Mandatory Reporting of GHGs Rule (40 CFR Part 98). Metro and CHSRA have exercised their judgment to not implement this guidance for the Project.

Table 3.5-1. Applicable Laws, Regulations, and Plans for Air Quality and Global Climate Change

Law, Regulation, or Plan	Description
28545-28556 (1999)[2]	
Mandatory Reporting of Greenhouse Gases Rule (40 Code of Federal Regulations Part 98)	Independent of NEPA, but pursuant to 40 CFR Part 98 (the Mandatory Reporting of GHGs Rule), U.S. EPA requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 MT of CO_2e emissions per year.
Executive Order 13990 – Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis (2021)	EO 13990, of January 20, 2021, directs federal agencies to immediately review, and take action to address, federal regulations promulgated and other actions taken during the last 4 years that conflict with national objectives to improve public health and the environment; ensure access to clean air and water; limit exposure to dangerous chemicals and pesticides; hold polluters accountable, including those who disproportionately harm communities of color and low-income communities; reduce GHG emissions; bolster resilience to the impacts of climate change; restore and expand our national treasures and monuments; and prioritize both EJ and employment.
Executive Order 14008 (86 *Federal Register* 7619)– Tackling the Climate Crisis at Home and Abroad (2021)	EO 14008 was signed by President Biden on January 27, 2021. The EO 14008 establishes a "government-wide approach that reduces climate pollution in every sector of the economy; increases resilience to the impacts of climate change; protects public health; conserves our lands, waters, and biodiversity; delivers EJ; and spurs well-paying union jobs and economic growth, especially through innovation, commercialization, and deployment of clean energy technologies and infrastructure."
United States Department of Transportation Strategic Plan Fiscal Year 2022-2026	The Fiscal Year 2022-26 USDOT Strategic Plan is aligned with multiple EOs with a range of priorities including: protecting worker and traveler health and safety; providing economic relief to address effects of the COVID-19 pandemic; enhancing supply chain resilience, promoting economic competition, strengthening American leadership in clean cars and trucks, and spurring domestic manufacturing and innovation; restoring scientific integrity and tackling the climate crisis; improving cybersecurity and protecting privacy and civil liberties; affirmatively advancing equity, civil rights, racial justice, and equal opportunity; and supporting diversity, equity, inclusion, and accessibility in the federal workforce. The strategic goals include safety, economic strength and global competitiveness, equity, climate and sustainability, transformation, and organizational excellence.
State	
California State Implementation Plan (1990)	The 1990 amendments to the FCAA set new deadlines for attainment based on the severity of the pollution problem and launched a comprehensive planning process for attaining the NAAQS. The promulgation of the national 8-hour O_3 standard and the fine particulate matter ($PM_{2.5}$) standards in 1997 resulted in additional statewide air quality planning efforts. In response to new federal regulations, SIP also began to address ways to improve visibility in national parks and wilderness areas. SIPs are not single documents,

[2] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

Table 3.5-1. Applicable Laws, Regulations, and Plans for Air Quality and Global Climate Change

Law, Regulation, or Plan	Description
	but rather a compilation of new and previously submitted plans, programs, district rules, state regulations, and federal controls. Many of California's SIPs rely on the same core set of control strategies, including emission standards for cars and heavy trucks, fuel regulations, and limits on emissions from consumer products. State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the U.S. EPA for approval and publication in the FR. CFR, Title 40, Chapter I, Part 52, Subpart F, Section 52.220 lists all of the items which are included in the California SIP.
Local	
South Coast Air Quality Management District Rule 403	Fugitive dust is particulate matter that is suspended in the air by direct or indirect human activities. SCAQMD Rule 403 requires implementation of the best available dust control measures within the South Coast Air Basin during active operations capable of generating fugitive dust in order to reduce the amount of particulate matter entrained in the ambient air. Control measures may include watering, sweeping, soil stabilizers, wheel washing, and/or limiting vehicle speed and access in construction areas.
South Coast Air Quality Management District Rule 1113	SCAQMD Rule 1113 limits the VOC content on manufacture, distribution, and use of architectural coatings within the SCAQMD. The purpose of this rule is to reduce area source emissions. The VOC limits vary by coating category and are described in the Table of Standards within the rule.
City of Vernon General Plan	The City of Vernon General Plan includes an implementation plan with specified actions that correspond to related goals and policies applicable to air quality. The applicable action, goal and policy is as follows: • Action R-4: Coordinate with Other Agencies. Continue to participate and coordinate with the SCAQMD and neighboring jurisdictions to identify and encourage projects that improve mobility and reduce congestion on major roadways. Implement and interpret the General Plan in a manner consistent with SCAQMD's Air Quality Management Plan. • Goal R-2 Contribute to the continued gradual improvement of air quality in the South Coast Air Basin. • Policy R-2.1: Coordinate and cooperate with the SCAQMD and SCAG in efforts to implement the regional Air Quality Management Plan.

Notes:
CAFE=Corporate Average Fuel Economy; CARB=California Air Resources Board; CEQ=Council of Environmental Quality; CFR=Code of Federal Regulations; CO=carbon monoxide; CO_2e=Carbon Dioxide Equivalent; EO=Executive Order; FCAA=Federal Clean Air Act; GHG=greenhouse gas; MT=metric tons; NAAQS=National Ambient Air Quality Standards; NEPA=National Environmental Policy Act; NO_2=nitrogen dioxide; O_3=ozone; PM_{10}=particles of 10 micrometers or less; $PM_{2.5}$=particles of 2.5 micrometers or less; SCAG=Southern California Association of Governments; SIP=State Implementation Plan; SCAQMD=South Coast Air Quality Management District; SO_2=sulfur dioxide; USDOT=United States Department of Transportation; U.S. EPA=United States Environmental Protection Agency; VOC=volatile organic compounds

Table 3.5-2 lists the federal and state air pollutant standards, the principal health and atmospheric effects, the typical sources, and the current attainment status of the criteria pollutant emissions.

Table 3.5-2. Federal and State Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard[a]	Federal Standard[b]	Principal Health and Atmospheric Effects	Typical Sources	Basin Attainment Status
O_3[c]	1 hour	0.09 parts per million (ppm)	—	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known TACs. Biogenic VOC may also contribute.	Low-altitude O_3 is almost entirely formed from ROG or VOC and NOx in the presence of sunlight and heat. Major sources include motor vehicles and other mobile sources, solvent evaporation, and industrial and other combustion processes.	Federal: Extreme Nonattainment (8-hour)
	8 hours	0.070 ppm	0.070 ppm (4th highest in 3 years)			State: Nonattainment (1-hour and 8-hour)
CO	1 hour	20 ppm	35 ppm	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical O_3.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.	Federal: Attainment/ Maintenance
	8 hours	9.0 ppm	9 ppm			State: Attainment
	8 hours (Lake Tahoe)	6 ppm	—			
Respirable Particulate Matter (PM_{10})[d]	24 hours	50 µg/m^3	150 µg/m^3	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some TACs. Many aerosol and solid compounds are part of PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke and vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.	Federal: Attainment/ Maintenance
	Annual	20 µg/m^3	— (expected number of days above standard < or equal to 1)			State: Nonattainment

Table 3.5-2. Federal and State Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard[a]	Federal Standard[b]	Principal Health and Atmospheric Effects	Typical Sources	Basin Attainment Status
Fine Particulate Matter ($PM_{2.5}$)[d]	24 hours	—	35 µg/m^3	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most DPM—a TAC—is in the $PM_{2.5}$ size range. Many toxic and other aerosol and solid compounds are part of $PM_{2.5}$.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical (including photochemical) reactions involving other pollutants including NO_X, SO_X, ammonia, and ROG.	Federal: Serious Nonattainment
	Annual	12 µg/m^3	12.0 µg/m^3			State: Nonattainment
	Secondary Standard (annual)	—	15 µg/m^3 (98th percentile over 3 years)			
NO_2[e]	1 hour	0.18 ppm	100 ppb (98th percentile over 3 years)	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain. Part of the “NOx” group of O_3 precursors.	Motor vehicles and other mobile sources; refineries; industrial operations.	Federal: Attainment/ Maintenance
	Annual	0.030 ppm	0.053 ppm			State: Attainment
SO_2[f]	1 hour	0.25 ppm	75 ppb (99th percentile over 3 years)	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, and steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.	Federal: Attainment/ Unclassified
	3 hours	0.04 ppm	0.5 ppm			State: Attainment/ Unclassified
	24 hours	—	0.14 ppm			
	Annual Arithmetic Mean	—	0.03 ppm			

Table 3.5-2. Federal and State Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard[a]	Federal Standard[b]	Principal Health and Atmospheric Effects	Typical Sources	Basin Attainment Status
Pb[g,h]	Monthly	1.5 µg/m^3	—	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also, a TAC and water pollutant.	Pb-based industrial processes like battery production and smelters. Pb paint, leaded gasoline. Aerially deposited Pb from gasoline may exist in soils along major roads.	Federal: Nonattainment (Los Angeles County only)
	Calendar Quarter	—	1.5 µg/m^3			State: Attainment
	Rolling 3-month average	—	0.15 µg/m^3			
Sulfate	24 hours	25 µg/m^3	—	Premature mortality and respiratory effects. Contributes to acid rain. Some TACs attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.	Federal: NA State: Attainment/ Unclassified
Hydrogen Sulfide	1 hour	0.03 ppm	—	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.	Federal: NA State: Attainment/ Unclassified
Visibility Reducing Particles[i]	8 hours	Visibility of 10 miles or more (Tahoe: 30 miles) at relative humidity less than 70 percent	—	Reduces visibility. Produces haze. Note: not related to the Regional Haze program under the FCAA, which is oriented primarily toward visibility issues in National Parks and other “Class I” areas.	See particulate matter above.	Federal: NA State: Attainment/ Unclassified

Table 3.5-2. Federal and State Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State Standard[a]	Federal Standard[b]	Principal Health and Atmospheric Effects	Typical Sources	Basin Attainment Status
Vinyl Chloride[g]	24 hours	0.01 ppm	—	Neurological effects, liver damage, cancer. Also considered a TAC.	Industrial processes.	Federal: NA State: Attainment/ Unclassified

Notes:

[a] *California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility-reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations. Pollutants with "—" indicated there is no state standard attributed to that pollutant.*

[b] *National standards (other than O_3, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Pollutants with "—" indicated there is no state standard attributed to that pollutant.*

[c] *On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.*

[d] *On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.*

[e] *To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb). Note that the national 1-hour standard is in units of ppb. California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.*

[f] *On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of ppb. California standards are in units of ppm. To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.*

[g] *The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.*

[h] *The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.*

[i] *In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.*

µg/m^3= micrograms per cubic meter; Basin=South Coast Air Basin; CARB=Air Resources Board; CO=carbon monoxide; DPM=diesel particulate matter; FCAA=Federal Clean Air Act; NA=not applicable; NO_2 = nitrogen dioxide; NOx=oxides of nitrogen; O_3=ozone; Pb = lead; PM_{10}= particles of 10 microns or less; $PM_{2.5}$= particles of 2.5 microns or less; ppb=parts per billion; ppm=parts per million; ROG=reactive organic gas; SO_2=sulfur dioxide; TAC=toxic air contaminant; VOC=volatile organic compound

3.5.2 Methods for Evaluating Environmental Effects

Topics Considered

For the Malabar Yard railroad improvements, an evaluation was performed to determine if they would:

- Exceed the General Conformity *de minimis* levels for the South Coast Air Basin; and/or
- Exceed annual greenhouse gas (GHG) emissions of 25,000 metric tons (MT) of carbon dioxide equivalent (CO_2e).

Geographic Area Considered

For the purposes of evaluating air quality and global climate change impacts, the geographic area considered extends beyond the Malabar Yard study area that was used to generally characterize the affected environment. Table 3.5-3 provides a general definition of each geographic area considered for the air quality and global climate change evaluation.

Table 3.5-3. Geographic Areas Considered for Air Quality and Global Climate Change

General Definition	Geographic Area Considered
Air Quality	
Regional	South Coast Air Basin
Local	Project Footprint for Design Options considered plus 1/4-mile buffer for identification of sensitive receptors.
Global Climate Change	
Global	Worldwide
Federal/National	United States
State	State of California

Methodology

Criteria Air Pollutants

Emissions of criteria air pollutants were estimated using the CalEEMod (Version 2016.3.2)[3] emission calculation model. Short-term and annual construction emissions were estimated based on the construction schedule and type of construction equipment anticipated to be used to

[3] The latest version of CalEEMod at the time of the analysis was Version 2016.3.2. Since then, Version 2020.4.0 has been released and a newer, web-based Version 2022.1 has been launched.

construct the Malabar Yard railroad improvements (refer to Section 2.0, Table 2-3). The estimation of emissions considered how the Malabar Yard railroad improvements would offset the loss of storage tracks and provide a shorter direct route for BNSF freight trains to travel between Malabar Yard and the Los Angeles Junction and the potential for reducing both train emissions and truck VMT. Metro calculated these beneficial effects as part of a 2020 TCEP grant application. Operational direct effects are quantified for the first, 20th, and 30th years of operation and the total net benefit over a 30-year period. The avoided emissions account for both the reduction in train miles and reduction in truck VMT (Metro 2020b).

Quantification of Greenhouse Gas

For the purposes of determining whether or not GHG emissions from the Malabar Yard railroad improvements would be adverse, both construction and operational GHG emissions were quantified similar to the methodology for criteria air pollutants and compared to the appropriate thresholds. A net reduction of GHG emissions was calculated with implementation of the Malabar Yard railroad improvements as the reduced train miles and truck VMT directly reduced GHG emissions.

Effect Criteria

Federal General Conformity De Minimis Levels

The U.S. Environmental Protection Agency (EPA) General Conformity Rule establishes a process to demonstrate that federal actions would be consistent with applicable State Implementation Plans (SIP) and would not cause or contribute to new violations of the National Ambient Air Quality Standards (NAAQS), increase the frequency or severity of existing violations of the NAAQS, or delay the timely attainment of the NAAQS. The general conformity *de minimis* levels are defined in 40 CFR 93.153(b). Based on the attainment status, the *de minimis* levels that apply to all direct and indirect emissions generated during construction and operation of a project are shown in Table 3.5-4.[4]

Table 3.5-4. General Conformity *De Minimis* Levels for the South Coast Air Basin

Pollutant	Tons/year
NOx	10
VOC	10
PM_{10}	100

[4] *De minimis* levels are lower for pollutants that have design values farther from the ambient air quality standard. For the South Coast Air Basin, O_3 (ozone; volatile organic compound [VOC] and NOx) is in an extreme nonattainment area, particles of 10 micrometers or less (PM_{10}) is in an attainment/maintenance area, particles of 2.5 micrometers or less ($PM_{2.5}$) is in serious nonattainment area, and carbon monoxide (CO) is in an attainment/maintenance area.

Table 3.5-4. General Conformity *De Minimis* Levels for the South Coast Air Basin

Pollutant	Tons/year
$PM_{2.5}$	70
CO	100
SO_2	N/A

Source: U.S. EPA 2016
Notes:
SO_2 is in attainment for the South Coast Air Basin so there is no applicable threshold
CO=carbon monoxide; NOx=nitrogen oxide, PM_{10}=particles of 10 microns or less; $PM_{2.5}$=particles of 2.5 microns or less; VOC=volatile organic compound; SO_2= sulfur dioxide

To determine if the Malabar Yard railroad improvements would exceed the *de minimis* levels, CalEEMod was run to estimate annual construction emissions for two years of construction activity. The maximum annual construction emissions were then compared to the *de minimis* levels.

Greenhouse Gas Emissions

Pursuant to 40 CFR Part 98 (the Mandatory Reporting of GHGs Rule), U.S. EPA requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 MT of CO_2e emissions per year.

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects for each of the topics considered is presented below.

Federal General Conformity

Project-related effects would be considered adverse if either construction or operational emissions were calculated to be above the *de minimis* levels for criteria air pollutants.

Greenhouse Gas Emissions

Project-related effects would be considered adverse if the combined total annual GHG emissions from construction and operations are greater than the federal reporting threshold of 25,000 MT of CO_2e per year.

3.5.3 Affected Environment

Regional Setting

The Malabar Yard railroad improvements are located in Los Angeles County, an area within the South Coast Air Basin (Basin), which includes Orange County and the non-desert portions of Los

Angeles, Riverside, and San Bernardino Counties. Air quality regulations in the Basin are administered by the South Coast Air Quality Management District (SCAQMD), a regional agency created for the Basin.

The Basin is an area of approximately 6,745 square miles bounded by the Pacific Ocean to the west and south, and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The terrain and geographical location determine the distinctive climate of the Basin, which is a coastal plain with connecting broad valleys and low hills.

Southern California lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. The mild climatological pattern is infrequently interrupted by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography) as well as human-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and dispersion of pollutants throughout the Basin, making it an area of high air pollution potential.

The greatest air pollution effects in the Basin occur from June through September, mainly because of the combination of large amounts of pollutant emissions, light winds, and shallow vertical atmospheric mixing. This frequently reduces pollutant dispersion, causing elevated air pollution levels. Pollutant concentrations in the Basin vary with location, season, and time of day. Ozone (O_3) concentrations, for example, tend to be lower along the coast, higher in the near inland valleys, and lower in the far inland areas of the Basin and adjacent desert.

Climate

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit. With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The annual average maximum temperature recorded at the Los Angeles Downtown University of Southern California Campus Station, the closest climatological station to Malabar Yard, is 74.0 degrees Fahrenheit and the annual average minimum is 55.8 degrees Fahrenheit (Western Regional Climate Center 2018).

Local Setting

SCAQMD monitors air quality conditions at 37 locations throughout the Basin. The closest monitoring station to Malabar Yard is the North Main Street Station in the City of Los Angeles. With respect to NAAQS, the U.S. EPA has classified the Basin as attainment/maintenance for carbon monoxide (CO), particles of 10 micrometers or less (PM_{10}), and nitrogen dioxide (NO_2), attainment/unclassified for sulfur dioxide (SO_2), and nonattainment for O_3 and particles of 2.5 micrometers or less ($PM_{2.5}$) (Table 3.5-2).

Sensitive Receptors

Sensitive populations are more susceptible to the effects of air pollution than the general population. Sensitive populations (sensitive receptors) that are in proximity to localized sources of toxics, particulate matter, and CO are of particular concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 2021). SCAQMD considers a sensitive receptor to be a receptor where it is possible that an individual could remain for 24 hours. Commercial and industrial facilities are not included in the definition of sensitive receptor because employees do not typically remain onsite for a full 24 hours, but are present for shorter periods of time, such as eight hours (SCAQMD 2008).

The Malabar Yard study area is in an urbanized environment generally characterized by industrial and mixed commercial uses, transportation-railroad uses, and communications, utilities-related uses. No sensitive receptors are located within a one-quarter mile of the Project footprint for the design options considered. The closest sensitive receptors to the Malabar Yard railroad improvements (Figure 3.5-1) are:

- Residences at 2415-2427 E 53rd St. (located approximately 1,325 feet [0.25 mile] south from the Malabar Yard railroad improvements).
- Vernon City School at 2360 East Vernon Avenue (located approximately 1,350 feet [0.25 mile] northwest from the Malabar Yard railroad improvements).
- Residences on Furlong Place located approximately 1,650 feet (0.31 mile northwest from the Malabar Yard railroad improvements).

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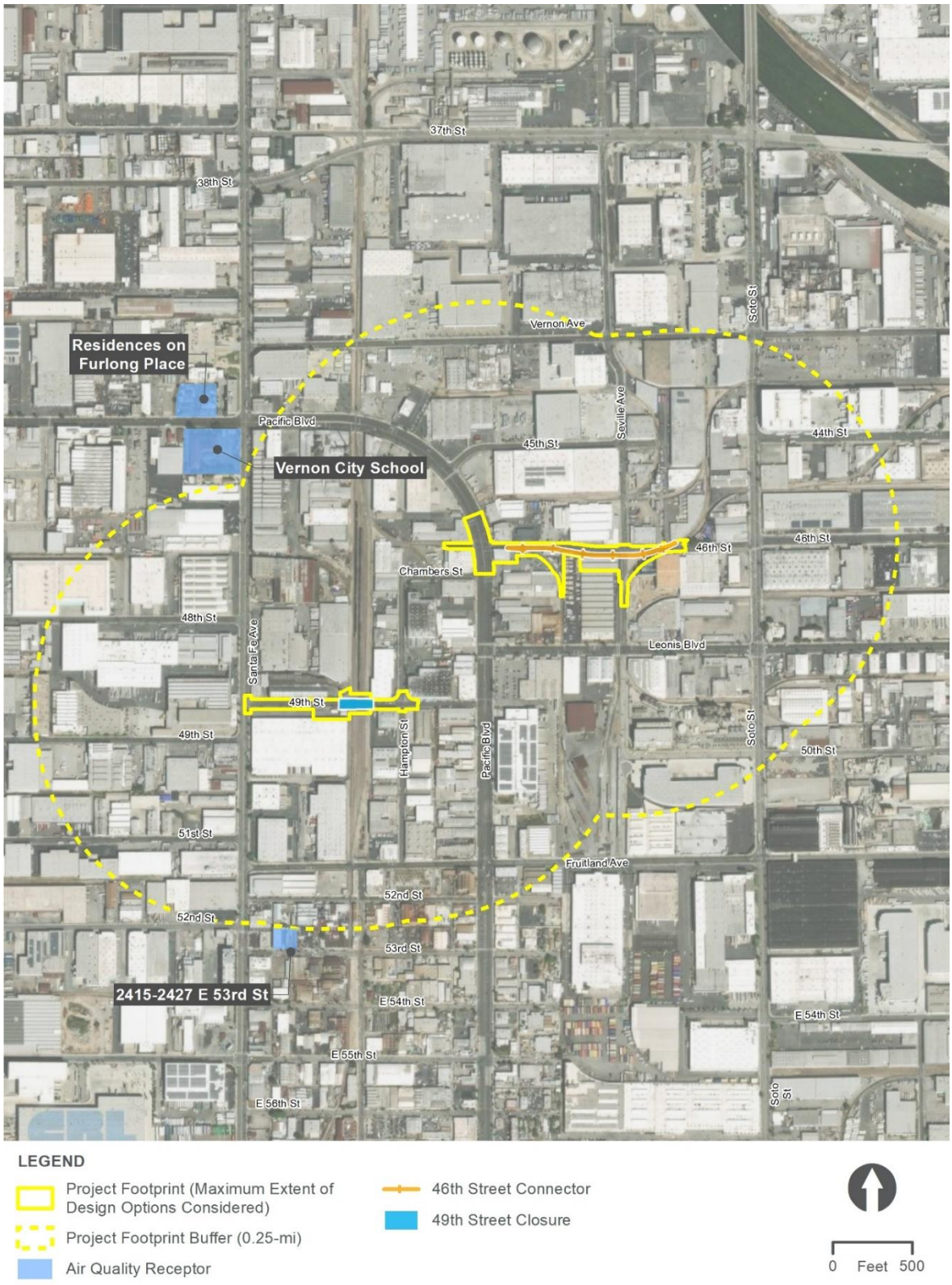
Figure 3.5-1. Sensitive Receptors Closest to Malabar Yard Railroad Improvements



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3.5.4 Environmental Consequences

No Action Evaluation

The following topics were evaluated to determine potential effects if the Malabar Yard railroad improvements in the City of Vernon were not implemented in conjunction with the Build Alternative.

General Conformity De Minimis Levels for the South Coast Air Basin

If the Malabar Yard railroad improvements were not implemented, no construction or operational-related emissions would occur. A continuation of existing conditions would result in generation of similar pollutant emission levels at and within the vicinity of the existing Malabar Yard and exposure of pollutant emissions to the same sensitive receptors based on current levels of train movements into and out of Malabar Yard. The beneficial impacts of reducing criteria air pollutant emissions from removal of freight trains on the heavily congested San Bernadino Subdivision would not be realized.

Annual Greenhouse Gas Emissions in Excess of 25,000 Metric Tons of CO_2e

If the Malabar Yard railroad improvements were not implemented, the continuation of existing conditions would result in generation of similar GHG emissions based on current levels of train movements. The beneficial impacts of reducing GHG emissions by indirectly reducing train miles for empty intermodal railcars and reducing truck VMT would not be realized.

Evaluation of Malabar Yard Railroad Improvements

TOPIC 3.5-A	General conformity *de minimis* levels for the South Coast Air Basin

Direct Effects – Construction

Air pollutant emissions associated with construction of any combination of design options for the Malabar Yard railroad improvements would be released from the exhausts of construction equipment, soil-hauling trucks, delivery trucks, and worker commute vehicles. Particulate matter emissions would result from soil movement and wind-blown dust from disturbed surfaces. In compliance with SCAQMD Rule 403, during clearing, grading, earthmoving, or excavation operations, fugitive dust emissions will be controlled by regular watering or other dust preventive measures, as specified in SCAQMD Rule 403. Implementation of best available control measures identified in SCAQMD Rule 403 would reduce fugitive dust emissions.

Construction activities produce combustion emissions from various sources, such as site grading, utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, and motor vehicles transporting construction crews. Exhaust emissions from construction activities envisioned on site would vary daily as construction activity levels change. The use of construction equipment on site would result in localized exhaust emissions.

The CalEEMod (Version 2016.3.2) was used to calculate the construction emissions. Table 3.5-5 shows results of the modeling for the annual conditions. The analysis assumes that construction would take approximately 18 months to complete.

Table 3.5-5 indicates that the annual emissions associated with construction of any combination of design options for the Malabar Yard railroad improvements would not exceed the *de minimis* levels. Therefore, no direct adverse effect would occur.

Table 3.5-5. Annual Construction Emissions (tons for criteria air pollutants; metric tons for CO_2e)

Year	CO	ROG	NOx	PM_{10}	$PM_{2.5}$	CO_2e
2028	1.5	0.1	1.2	<0.1	<0.1	276
2029	5.2	0.5	4.0	0.3	0.2	946
2030	7.1	0.5	1.9	0.2	<0.1	1,385
Maximum	**7.1**	**0.5**	**4.0**	**0.3**	**0.2**	**1,385**
***De minimis* level**	**100**	**10**	**10**	**100**	**70**	**—**
Exceedance	**No**	**No**	**No**	**No**	**No**	**—**

Notes:
CO=carbon monoxide; CO_2e=carbon dioxide equivalents; NOx=nitrogen oxides; $PM_{2.5}$=particles of 2.5 micrometers or less; PM_{10}=particles of 10 micrometers or less; ROG=reactive organic gas

Direct Effects – Operations

Based on the air quality analysis performed, any combination of design options for the Malabar Yard railroad improvements would result in regional benefits to air quality and GHG emissions as a result of reduced emissions. Table 3.5-6 lists the Malabar Yard railroad improvements benefits for first, 20th, and 30th years of operation and the total net benefit over a 30-year period. Both criteria air pollutant and GHG emissions would be reduced over the 30-year time period with greater reductions being seen further out in the future. The Malabar Yard railroad improvements are mitigation for removal of the existing intermodal freight railcar storage tracks at BNSF's West Bank Yard. Without the use of the Malabar Yard for storage, displaced intermodal railcars would be stored on mainline tracks as rolling stocks to Barstow and points east, which would substantially degrade on-time performance levels for passenger trains on the already heavily congested freight/passenger rail mainline tracks. Use of Malabar Yard and particularly the 46th Street Connector would offset the loss of the storage tracks and provide a short direct route for BNSF to connect Malabar Yard and the Los Angeles Junction, through the City of Vernon.

Benefits from operation of Malabar Yard railroad improvements include reduced intermodal railcar miles of travel, resulting in reduced fuel consumption by rail and associated rail emissions. In

addition, the Malabar Yard railroad improvements would improve mainline rail network capacity to support regional freight rail growth, thereby avoiding the diversion of rail served demand to long-haul trucking. The reduction in truck VMT results in reduced fuel consumption by truck and reduced truck emissions. As shown in Table 3.5-6, any additional increase in criteria air pollutant emissions would be offset by the reduced intermodal railcar miles of travel and reduced truck VMT. Table 3.5-6 quantifies the emissions reduction on a regional scale.

Table 3.5-6. Annual Operational Emissions (tons for criteria air pollutants; metric tons for CO_2)

Year	CO	ROG	NOx	PM_{10}	$PM_{2.5}$	CO_2
Year 1	0.00	0.00	-7.87	-0.12	0.00	-2,857
Year 20	-1.54	-0.19	-33.31	-0.57	-0.21	-18,968
Year 30	-0.79	-0.09	-34.24	-0.56	-0.13	-21,222
***De minimis* level**	**100**	**10**	**10**	**100**	**70**	**—**
Total over 30 years	**-35.00**	**-4.51**	**-858.87**	**-14.48**	**-4.62**	**-452,545**
Exceedance	**No**	**No**	**No**	**No**	**No**	**—**

Source: Metro 2020b
Notes:
CO=carbon monoxide; CO_2e=carbon dioxide equivalents; NOx=nitrogen oxides; $PM_{2.5}$=particles of 2.5 micrometers or less; PM_{10}=particles of 10 micrometers or less; ROG=reactive organic gas

In addition to the regional air quality benefits, from a localized perspective, implementation of the 46th Street Connector would shift some freight rail activity away from sensitive receptors, such as the Vernon City School and the residences on Furlong Place, and toward the industrial warehouses to the east because fewer trains would be traveling along the Harbor Subdivision north of Malabar Yard. Furthermore, there are no childcare or daycare centers within a quarter mile of the Project footprint for the design options considered. Therefore, a beneficial effect would occur.

Indirect Effects – Construction and Operations

Implementation of the railroad improvements would aid in the overall reduction of criteria air pollutant emissions through regional VMT reductions. Construction of the any combination of design options for the Malabar Yard railroad improvements would involve trucking construction materials to the site and removing demolition materials that would result in construction-related VMT and emissions. However, this would be outweighed by the larger operational emissions savings from the implementation of the Malabar Yard railroad improvements because it would provide storage space for displaced intermodal railcars and a short, direct route for BNSF thereby reducing train miles, and avoiding a shift to long haul trucking. Therefore, even accounting for a

slight increase from construction emissions, there would be a long-term, regionwide reduction in emissions. Indirect effects would be beneficial.

TOPIC 3.5-B	Annual GHG emissions in excess of 25,000 MT of CO_2e

Direct Effects – Construction

Implementation of any combination of design options for the Malabar Yard railroad improvements would contribute directly to emissions of GHGs from the combustion of fossil fuels. Demolition, construction, and clearing activities would generate approximately 2,608 MT of CO_2e, as detailed in Table 3.5-5. Amortized over a 30-year period, the approximate life of the Malabar Yard railroad improvements, the yearly contribution to GHG from construction would be 87 MT of CO_2e. The total and annual amortized GHG emissions are below the federal reporting threshold of 25,000 MT of CO_2e per year. Therefore, the limited amount of emissions would not likely contribute to global warming to any discernible extent and no direct adverse would occur.

Direct Effects – Operations

As shown in Table 3.5-6, any combination of design options for the Malabar Yard railroad improvements would result in a net reduction in regional CO_2 emissions because it would reduce train miles for empty intermodal railcars and reduce truck VMT. Direct effects would be beneficial.

Indirect Effects – Construction and Operations

Implementation of any combination of design options for the Malabar Yard railroad improvements would aid in the overall reduction of GHG emissions through regional VMT reductions. Construction of the any combination of design options for the Malabar Yard railroad improvements would involve trucking construction materials to the site and removing demolition materials that would result in construction-related VMT and emissions. However, this would be outweighed by the larger operational emissions savings from the implementation of the Malabar Yard railroad improvements because it would provide storage space for displaced intermodal railcars and a short, direct route for BNSF thereby reducing train miles, and avoiding a shift to long haul trucking. Therefore, even accounting for a slight increase from construction emissions, there would be a long-term, regionwide reduction in emissions. Indirect effects would be beneficial.

3.5.5 Mitigation Measures

Construction and operation of any combination of design options for Malabar Yard railroad improvements would not exceed general conformity *de minimis* levels for Basin or annual GHG emissions in excess of 25,000 MT of CO_2e. Therefore, no mitigation is required. Although not required, Malabar Yard Mitigation Measure AQ-1 and MY AQ-2 are applicable because Malabar Yard railroad improvements would be constructed at the same time as construction of the Build Alternative. When combined, there would be an exceedance of NOx during construction. Implementation of MY AQ-2 would reduce NOx emissions below the *de minimis* levels. MY AQ-1

is a requirement of the Link US Final EIR for the Build Alternative and SCAQMD to reduce daily fugitive dust emissions and associated air quality impacts.

MY AQ-1 **Fugitive Dust Control:** In compliance with SCAQMD Rule 403, during clearing, grading, earthmoving, or excavation operations, fugitive dust emissions shall be controlled by regular watering or other dust preventive measures using the following procedures, as specified in SCAQMD Rule 403:

- Minimize land disturbed by clearing, grading, and earthmoving, or excavation operations to prevent excessive amounts of dust.
- Provide an operational water truck on site at all times; use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the Project work areas; watering shall occur at least twice daily with complete coverage, preferably in the late morning and after work is done.
- Suspend grading and earthmoving when wind gusts exceed 25 miles per hour unless the soil is wet enough to prevent dust plumes.
- Securely cover trucks when hauling materials on or off site.
- Stabilize the surface of dirt piles if not removed immediately.
- Limit vehicular paths and limit speeds to 15 miles per hour on unpaved surfaces and stabilize any temporary roads.
- Minimize unnecessary vehicular and machinery activities.
- Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway.
- Revegetate or stabilize disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities.

The following measures shall also be implemented to reduce construction emissions:

- The construction contractor shall prepare and update on a monthly basis a comprehensive inventory list of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) (i.e., make, model, engine year, horsepower, emission rates) that could be used an aggregate of 40 or more hours throughout the duration of construction to demonstrate how the construction fleet is consistent with the requirements of Metro's Green Construction Policy.
- Ensure that all construction equipment is properly tuned and maintained.
- Minimize idling time to 5 minutes, whenever feasible, which saves fuel and reduces emissions.
- Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators, whenever feasible.

- Arrange for appropriate consultations with CARB or SCAQMD to determine registration and permitting requirements prior to equipment operation at the site and obtain the California Air Resources Board (CARB) Portable Equipment Registration with the state or a local district permit for portable engines and portable engine-driven equipment units used at the Project work site, with the exception of on-road and off-road motor vehicles, as applicable.

These control techniques shall be included in Project specifications and shall be implemented by the construction contractor.

MY AQ-2 **Compliance with U.S. EPA's Tier 4 Final Exhaust Emission Standards and Renewable Diesel Fuel for Off-Road Equipment:** In compliance with Metro's Green Construction Policy, all off-road diesel powered construction equipment greater than 50 horsepower shall comply with U.S. EPA's Tier 4 final exhaust emission standards (40 CFR Part 1039). In addition, if not already supplied with a factory-equipped diesel particulate filter, all construction equipment shall be outfitted with best available control technology devices certified by the CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine, as defined by CARB regulations.

In addition to the use of Tier 4 equipment, all off-road construction equipment shall be fueled using 100 percent renewable diesel.

3.6 Noise and Vibration

This section provides an evaluation of potential effects related to noise and vibration that may result upon implementation of the Malabar Yard railroad improvements.

3.6.1 Regulatory Framework

Table 3.6-1 identifies and summarizes applicable laws, regulations, and plans relative to noise and vibration.

Table 3.6-1. Applicable Laws, Regulations, and Plans for Noise and Vibration

Law, Regulation, or Plan	Description
Federal	
The Noise Control Act of 1972 (42 United States Code §4901 et seq.)	The Noise Control Act of 1972 (42 USC Section 4910) was the first comprehensive statement of national noise policy. It declared that "it is the policy of the U.S. to promote an environment for all Americans free from noise that jeopardizes their health or welfare."
Federal Transit Administration *Transit Noise and Vibration Impact Assessment Manual* of 2018	The Assessment Manual provides the methodology and impact criteria applicable to freight rail components associated with the Malabar Yard railroad improvements.
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(3),* 64 *Federal Register* 28545-28556 (May 26, 1999)	The FRA's Environmental Procedures require the draft and final EIS to identify any significant changes likely to occur in noise standards established by federal, state, and local standards; especially those enforced by the FRA for railroad equipment, yards and facilities including 49 CFR Part 210 "Railroad Noise Emission Compliance Regulations."
40 Code of Federal Regulations Part 201 - Noise Emission Standards for Transportation Equipment; Interstate Rail Carriers	This regulation addresses noise emission standards for transportation equipment/rail carriers.
State	
California Noise Control Act	The California Noise Control Act was enacted in 1973 (Health and Safety Code Section 46010 et seq.) and provides guidance for the preparation of the required noise elements in city and county general plans, pursuant to Government Code Section 65302(f). In preparing the noise element, a city or county must identify local noise sources and analyze and quantify, to the extent practicable, current and projected noise levels for various sources, including highways and freeways; passenger and freight railroad operations; ground rapid transit systems; commercial, general, and military aviation and airport operations; and other ground stationary noise sources.
Local	
City of Vernon Municipal Code	The City of Vernon regulates construction noise within industrial zones via its Municipal Code, specifically Section 26.4.1-7(b)(2). This section includes noise standards for lots within designated noise zones, measured cumulatively with existing noise from all businesses on the lot. For lots not within one tenth of a mile from any residence or school located in Vernon or

Table 3.6-1. Applicable Laws, Regulations, and Plans for Noise and Vibration

Law, Regulation, or Plan	Description
	abutting communities, the allowable exterior noise is 75 dBA anytime. Section 26.4.1-7(b)(2) further states: (ii) No Person, in any location within the city, shall create any noise, or allow the creation of noise, on any Lot owned, leased, occupied or otherwise controlled by such Person which causes the cumulative noise level when measured at any point along the Lot line of the Lot on which the source of the noise is located to exceed: A. The applicable noise standard for a cumulative period of more than thirty (30) minutes in any hour; or B. The applicable noise standard plus five (5) dBA for a cumulative period of more than fifteen (15) minutes in any one hour; or C. The applicable noise standard plus ten (10) dBA for a cumulative period of more than five (5) minutes in any hour; or D. The applicable noise standard plus fifteen (15) dBA for a cumulative period of more than one (1) minute in any hour; or (iii) In the event the ambient noise level exceeds any of the noise limit categories set forth in subsections (A), (B), or (C) of subsection 2(ii) of this Section, the cumulative period applicable to such category shall be increased to reflect the ambient noise level, plus 5 dBA. (iv) If a Lot is located on a boundary between two (2) different noise zones, the noise level standard applicable to the quieter noise zone shall apply. (v) If the noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be determined, the measured noise level obtained while the source is in operation shall be compared directly to the Lot's designated noise zone for the time of day the noise level is measured. (vi) Any noise source in excess of the standards set forth in the City of Vernon's Municipal Code is permitted only with a Conditional Use Permit.
City of Vernon General Plan Noise Element	The Noise Element sets forth noise management goals and policies, and programs for the City of Vernon, which is recognized in the General Plan as an industrial city. The city's General Plan purpose with respect to noise is to "protect people living and working in Vernon from extensive exposure to excessive or unhealthy noise levels." The Noise Element acknowledges that the most significant noise-producing activity within the city involves transportation systems, including train movements along regional rail lines, and encourages the enforcement of local, state, and federal noise levels (Policy N-1.1). Goal N-1 specifically addresses reduction of impacts on industrial businesses resulting from transportation noise sources. The following policy addresses rail operations within the City: **Policy N-1.2:** "Review noise impacts when rail corridors are consolidated, and review ways to reduce impacts on adjacent businesses."

Notes:
CFR=Code of Federal Regulations; dBA=A-weighted decibel; EIS=Environmental Impact Statement; FRA=Federal Railroad Administration; USC=United States Code

3.6.2 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the Malabar Yard railroad improvements would affect:

- Noise levels in excess of established general plan, noise ordinance, or agency standards;
- Groundborne vibration and groundborne noise levels; and/or
- Ambient noise levels.

Geographic Area Considered

The FTA screening distances for noise and vibration are the geographic areas used to characterize the affected environment and to determine potential effects related to noise and vibration.

Methodology

FTA*'s Transit Noise and Vibration Impact Assessment* (FTA 2018) manual was followed to evaluate the potential noise and vibration effects of the Malabar Yard rail yard railroad improvements. Noise and vibration effects were assessed using procedures followed by the FTA for rail yard improvements, because FRA defers to FTA evaluation procedures for this type of project.

FTA and FRA guidelines include a screening level assessment that is used to establish whether a more detailed analysis should be conducted. For the Malabar Yard railroad improvements, the project system is considered a yard and therefore has different screening distances than a commuter main line. This screening assessment was performed and, per the FTA and FRA guidelines, no noise-sensitive land uses are located within 1,000 feet of the proposed Malabar Yard rail line along the 46th Street and 49th Street intersection with Malabar Yard (without obstructions) or within 650 feet from the proposed Malabar Yard rail line along the 46th Street and 49th Street intersection with Malabar Yard (with obstructions) (refer to Figure 3.6-1).

FTA's three land use categories are as follows:

- **Noise Category 1** – Tracts of land where quiet is an essential element in their intended purpose, such as outdoor amphitheaters, concert pavilions, and National Historic Landmarks with significant outdoor use.
- **Noise Category 2** – Residences and buildings where people normally sleep, including homes, hospitals, and hotels.
- **Noise Category 3** – Institutional land uses (schools, places of worship, libraries) with use typically during the daytime and evening. Other uses in this category include medical offices, conference rooms, recording studios, concert halls, cemeteries, monuments, museums, historical sites, parks, and recreational facilities.

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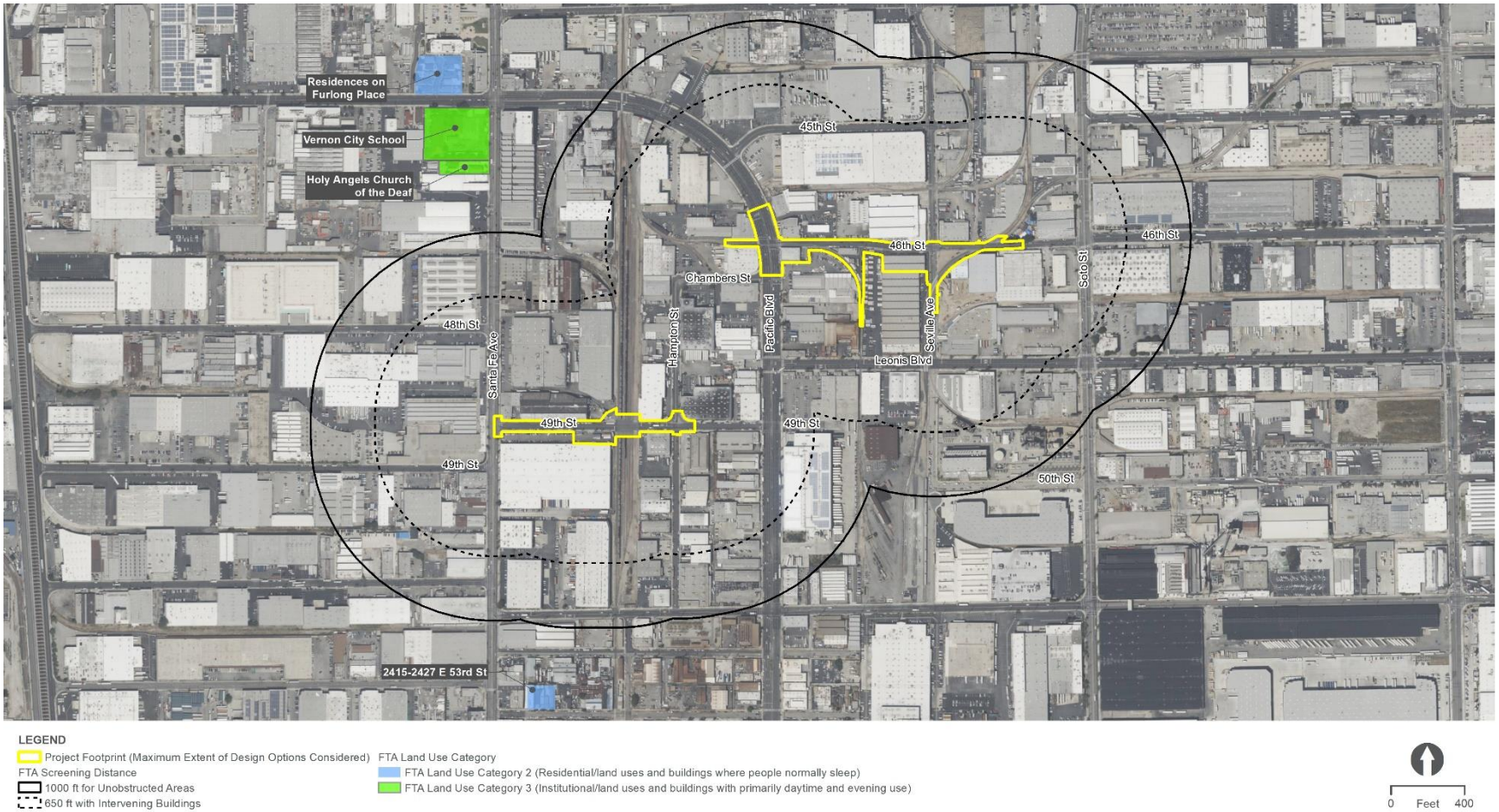
Figure 3.6-1. Noise Sensitive Land Uses



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A detailed assessment was not performed because no noise-or vibration-sensitive land uses are present within the designated screening distances for the Malabar Yard railroad improvements.

Construction Noise

FTA's guidelines for assessment of construction noise, as per the methodology in Section 7 of the FTA manual and Chapter 10 of the FRA manual, which are identical to one another, were considered, although a detailed assessment was not performed because there are no noise- or vibration-sensitive land uses within the designated screening distances for the Malabar Yard study area, as discussed above and as shown in Figure 3.6-1.

Noise from construction activity is generated by the broad array of powered, noise-producing mechanical equipment used in the construction process. This equipment ranges from handheld pneumatic tools to excavators, loaders, a variety of trucks, and tie and rail handling equipment. Construction equipment required to implement the Malabar Yard railroad improvements include trucks, loaders, rollers, mobile cranes, ballast tampers, generators, and other items. The range in noise levels typically generated by the equipment assumed for the analysis ranges from 74 A-weighted decibel (dBA) equivalent noise level (L_{eq}; e.g., water trucks) to 101 dBA L_{eq} (e.g., impact pile driver) at a distance of 50 feet.

Construction Vibration

The potential for damage to structures from construction vibration was considered, although a detailed assessment was not performed because there are no noise- or vibration-sensitive land uses within the designated screening distances for the Malabar Yard railroad improvements, as discussed above and as shown on Figure 3.6-1.

Vibration source levels for a variety of typical construction equipment types are outlined in Table 7-4 of the FTA manual in terms of peak particle velocity (PPV) in inches-per-second at a reference distance of 25 feet from the source and root-mean-square velocity in decibels (VdB) at 25 feet. The source of typical vibration levels for an impact pile driver (0.644 inch-per-second PPV) and vibratory roller (0.210 inch-per-second PPV) is presented below for information purposes to demonstrate the typical vibration levels associated with construction activities for Malabar Yard railroad improvements.

3.6.3 Affected Environment

Noise- and Vibration-Sensitive Land Uses

The closest noise- and vibration-sensitive land use is a place of worship (Holy Angels Church of the Deaf, FTA Category 3 use) located at 4433 South Santa Fe Avenue, west of Malabar Yard and south of the Vernon Avenue/Pacific Boulevard intersection. The church is located behind intervening buildings and is outside of the 1,000-foot FTA screening distance as depicted in Figure 3.6-1. Additionally, there are no FTA Category 1 or 2 uses within 1,000 feet of Malabar Yard.

Existing Noise Environment

Noise measurements were not completed at the Holy Angels Church of the Deaf because it is outside of the screening distance and therefore would not be impacted by the Malabar Yard railroad improvements using applicable FTA noise impact criteria. Nevertheless, sound levels for the area are documented in the City's Noise Element, which indicates that existing sound levels are 65 dBA Community noise equivalent level, considered the same as 65 dBA day-night average sound level (L_{dn}) for the purposes of this analysis.

Existing Vibration Levels

Existing vibration levels were not monitored because the Holy Angels Church of the Deaf is outside of the screening distance and no effect would occur from the Malabar Yard railroad improvements. There are no vibration-sensitive land uses within the screening distance of the Malabar Yard railroad improvements.

3.6.4 Environmental Consequences

No Action Evaluation

The following topics were evaluated to determine potential effects if the Malabar Yard railroad improvements in the City of Vernon were not implemented in conjunction with the Build Alternative.

Noise Levels in Excess of Established General Plan, Noise Ordinance, or Agency Standards

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects would occur related to noise levels in excess of established General Plan, noise ordinance, or agency standards. Existing freight train operations at Malabar Yard and along existing rail lines in the study area would continue, and there would be no change in sound levels as trains traverse the area.

Groundborne Vibration and Groundborne Noise Levels

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects would occur related to groundborne vibration and groundborne noise levels. Existing freight train operations at Malabar Yard and along existing rail lines in the study area would continue, and there would be no change in vibration levels as trains traverse the area.

Ambient Noise Levels

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects would occur related to an increase in ambient noise levels.

Evaluation of Malabar Yard Railroad Improvements

Although a detailed noise assessment is not required per the applicable FTA and FRA guidelines (as described in Section 3.6.2), an evaluation was performed to demonstrate the predicted noise and vibration levels in the vicinity of Malabar Yard railroad improvements. The two design options considered for each of the Malabar Yard railroad improvements on 49th Street and 46th Street are located in the same geographic area, would be implemented in a similar fashion, and there would be no difference in distance to noise- and vibration-sensitive land uses; therefore, noise and vibration from train operations at Malabar Yard and along the 46th Street Connector is essentially the same under either design option at both locations. The evaluation below is applicable to both design options at both locations, unless otherwise noted.

TOPICS 3.6-A AND 3.6-C	Noise levels in excess of established general plan, noise ordinance, or agency standards; ambient noise levels

Direct Effects – Construction

Construction of any combination of design options for the Malabar Yard railroad improvements would occur in phases over an approximately 18-month schedule and would result in temporary periods of elevated noise levels. Construction would primarily take place during daytime hours. Table 3.6-2 and Table 3.6-3 provide the predicted daytime noise level at various distances for both the 46th Street Connector and 49th Street Closure, respectively. The daytime construction noise impact criterion is 80 dBA L_{eq} and construction noise is predicted to attenuate to this level at approximately 150 feet from the loudest construction phase (track installation), which would be the same for both design options at both locations. As shown in Figure 3.6-1, the closest noise-sensitive land use is located outside of the 1,000-foot FTA screening distance. Since there are no noise-sensitive land uses within 150 feet, no direct adverse effect would occur.

Direct Effects – Operations

Any combination of design options for the Malabar Yard railroad improvements would create additional storage capacity and operational efficiency but would not result in a change to the track alignment or in how the yard or trains using the yard operate. The 46th Street connector would be located between two active rail lines. Therefore, there would be no perceptible change in operational noise under either design option. No direct adverse effect would occur.

Indirect Effects – Construction and Operations

Any combination of design options for the Malabar Yard railroad improvements would occur in an industrial-zoned area and are unlikely to encourage residential and commercial infill development that could indirectly result in the placement of new noise-sensitive land uses near Malabar Yard that would be affected by construction and operational noise. In this context, no indirect adverse effect would occur.

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Table 3.6-2. 46th Street Connector Construction Noise Levels

Component	Equipment			Composite Sound Level (L_{eq}) at Distance[b] Variable Distances (feet)					Distance to Impact (feet)
	Type	Quantity	L_{max} at 50 feet [a]	50	100	200	400	800	
Building demolition	Loader	2	79	83	77	71	65	59	71
	Loader Haul truck	3	77						
	Other construction	4	85						
Utility Relocation	Concrete transit mixer	1	80	84	78	72	66	60	79
	Haul truck	3	84						
	Front end loader	2	80						
	Other construction equipment	4	85						
Removal of Existing Track	Tractors	4	84	87	81	75	69	63	112
	Front end loader	2	80						
	Haul truck	3	84						
	Excavator	1	85						
Subgrade Construction	Loader	2	80	89	83	77	71	65	141
	Dozer	2	85						
	Roller	2	85						
	Other construction equipment	2	85						

Table 3.6-2. 46th Street Connector Construction Noise Levels

Component	Equipment			Composite Sound Level (L_{eq}) at Distance[b] Variable Distances (feet)					Distance to Impact (feet)
	Type	Quantity	L_{max} at 50 feet [a]	50	100	200	400	800	
	Excavator	1	85						
New Track Ballast Installation	Loader	4	80	87	81	75	69	63	112
	Dozer	4	85						
	Other construction equipment	4	85						
Signal Installation	Tractors	2	84	86	80	74	68	62	100
	Other construction equipment	6	85						
Track Installation	Concrete transit mixer	1	85	89	83	77	71	65	141
	Haul truck (6 (6 cubic yards)	1	84						
	Rubber front end loader	1	80						
	Other construction Equipment	1	85						
	Excavator	6	85						

Notes:

[a] ***Measured L_{max} at given reference distance obtained from the Federal Highway Administration Roadway Construction Noise Model, Federal Highway Administration 2018, and/or FTA Noise and Vibration Guidance 2018***

[b] ***Distance factor determined by the inverse square law defined as 6 dBA per doubling of distance as sound travels away from an idealized point.***

FTA=Federal Transportation Administration; L_{eq}=equivalent noise level; L_{max}=maximum sound level

Table 3.6-3. 49th Street Closure Construction Noise Levels

Component	Equipment			Composite Sound Level (L_{eq}) at Distance[b] Variable Distances (feet)					Distance to Impact (feet)
	Type	Quantity	L_{max} at 50 feet [a]	50	100	200	400	800	
Utility Relocation	Concrete transit mixer	1	80	84	78	72	66	60	79
	Haul truck	3	84						
	Front end loader	2	80						
	Other construction equipment	4	85						
Removal of Existing Track	Tractors	4	84	87	81	75	69	63	112
	Front end loader	2	80						
	Haul truck	3	84						
	Excavator	1	85						
Subgrade Construction	Loader	3	80	86	80	74	68	62	100
	Dozer	1	85						
	Roller	1	80						
	Other construction equipment	2	85						

Table 3.6-3. 49th Street Closure Construction Noise Levels

Component	Equipment			Composite Sound Level (L_{eq}) at Distance[b] Variable Distances (feet)					Distance to Impact (feet)
	Type	Quantity	L_{max} at 50 feet [a]	50	100	200	400	800	
Closure of 49th Street	Tractors	4	80	89	83	77	71	65	141
	Loader	2	80						
	Haul truck	3	84						
	Excavator	1	85						
	Forklift	2	85						
	Compressor	2	80						
	Flatbed truck	2	85						
	Concrete transit mixer	3	80						
Signal Installation	Tractors	2	84	86	80	74	68	62	100
	Other construction equipment	6	85						
Bollard Installation	Loader	1	80	75	69	66	60	54	28
Track Installation	Loader	2	80	87	81	75	69	63	112
	Ballast regulator	1	85						
	Ballast tamper	1	85						

Table 3.6-3. 49th Street Closure Construction Noise Levels

Component	Equipment			Composite Sound Level (L_{eq}) at Distance[b] Variable Distances (feet)					Distance to Impact (feet)
	Type	Quantity	L_{max} at 50 feet [a]	50	100	200	400	800	
	Excavator	6	85						

Notes:

[a] ***Measured L_{max} at given reference distance obtained from the Federal Highway Administration Roadway Construction Noise Model, Federal Highway Administration 2018, and/or FTA Noise and Vibration Guidance 2018.***

[b] ***Distance factor determined by the inverse square law defined as 6 dBA per doubling of distance as sound travels away from an idealized point.***

FTA=Federal Transportation Administration; L_{eq}=equivalent noise level; L_{max}=maximum sound level

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TOPIC 3.6-B	Groundborne vibration and groundborne noise levels

Direct Effects – Construction

Construction of any combination of design options for the Malabar Yard railroad improvements would result in temporary vibration from the use of heavy equipment and machinery. Predicted vibration levels are provided in Table 3.6-4. The piece of equipment that would be used for construction of both design options for the Malabar Yard railroad improvements that is associated with the highest vibration level, a vibratory roller, was used to demonstrate typical vibration levels that could be experienced. Unlike prediction of construction noise where multiple pieces of equipment are additive to predict the overall sound level, typical vibration levels are predicted using the piece of equipment with the highest vibration level and other vibration sources are not additive. The vibratory roller is not predicted to damage structures because the vibratory roller would not be used within 25 feet of a sensitive structure, a distance that eliminates concern of structural damage, or 140 feet of vibration-sensitive land uses, a distance that would be considered for frequent vibration over the course of several days and potential annoyance from such activity. No adverse effect would occur.

Direct Effects – Operations

Any combination of design options for the Malabar Yard railroad improvements would not result in a change in how the yard operates and the track alignment at the yard would not change; consequently, there would be no perceptible change in vibration at Malabar Yard for either design option at both locations. The 46th Street Connector would be located between two active rail lines. No adverse effect would occur.

Indirect Effects – Construction and Operations

Construction and operation of any combination of design options for the Malabar Yard railroad improvements is unlikely to result in indirect effects related to groundborne vibration that would result in vibration-related annoyance or physical damage to adjacent structures because construction and operational vibration sources would dissipate with distance. No adverse effect would occur.

3.6.5 Mitigation Measures

Construction and operation of any combination of design options for Malabar Yard railroad improvements would not result in adverse noise or vibration effects. Therefore, no mitigation is required.

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Table 3.6-4. Groundborne Vibration and Groundborne Noise Levels

Equipment	PPV at 25 feet (inch/second)	VdB at 25 feet	50 feet		75 feet		100 feet		150 feet		200 feet		300 feet	
			PPV (inch/second)	VdB	PPV (inch/second)	VdB	PPV (inch/second)	VdB	PPV (inch/second)	VdB	PPV (inch/second)	VdB	PPV (inch/second)	VdB
Vibratory roller	0.21	94	0.074	85	0.040	80	0.026	76	0.014	70	0.009	67	0.005	62

Notes:
PPV=peak particle velocity; VdB=vibration velocity in decibels

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3.7 Biological and Wetland Resources

This section provides an evaluation of potential effects related to biological and wetland resources that may result upon implementation of the Malabar Yard railroad improvements.

3.7.1 Regulatory Framework

Table 3.7-1 identifies and summarizes applicable laws and regulations relative to biological and wetland resources.

Table 3.7-1. Applicable Laws, Regulations, and Plans for Biological and Wetland Resources

Law or Regulation	Description
Federal	
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(5-7)*, 64 *Federal Register* 28545-28556 (1999)[1]	The FRA's *Procedures for Considering Environmental Impacts* require the draft and final EIS to consider in the analysis an evaluation of natural ecological systems, wetlands, and endangered species.
Endangered Species Act (16 United States Code Section 1531 et seq. [1973])	The Endangered Species Act provides a program for the conservation of threatened and endangered plants, animals, and their habitats. USFWS and National Marine Fisheries Service are the regulatory agencies responsible for implementing the Endangered Species Act, including listing species as endangered or threatened and designating critical habitat for listed species. Section 7 of the Endangered Species Act requires that federal agencies consult with USFWS and/or National Marine Fisheries Service when any action the agency carries out, funds, or authorizes may affect a federally listed species or designated critical habitat.
Migratory Bird Treaty Act (16 United States Code Section 703–712) (1918)	The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts nests, eggs, or products, except as allowed by implementing regulations (50 CFR Part 21).
Bald and Golden Eagle Protection Act (16 United States Code 668-668(d); 50 Code of Federal Regulations 22) (1940)	The Bald and Golden Eagle Protection Act, enacted in 1940, and amended several times since, prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald or golden eagles, including their parts (including feathers), nests, or eggs.
Protection of Migratory Bird Populations (United States Presidential Executive Order 13186 (2001)	EO 13186 mandates responsibilities of federal agencies to protect migratory birds, signed on January 10, 2001, directs federal agencies to take certain actions to further implement the MBTA and promote the conservation of migratory bird populations.

[1] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

Table 3.7-1. Applicable Laws, Regulations, and Plans for Biological and Wetland Resources

Law or Regulation	Description
Floodplain Management and Protection of Wetlands (United States Presidential Executive Order 11988 and 11990) (1977)	EO 11988 and 11990 requires that agencies must, to the extent permitted by law, avoid undertaking or providing assistance for new construction located in wetlands unless the lead agency finds that there is no practicable alternative to such construction and that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.
Clean Water Act (33 United States Code Section 1344 – Section 404 (1972)	Section 404 of the CWA establishes a program to regulate the discharge of fill materials into waters of the U.S., including wetlands. The Section 404 permit program authorizes discharges to waters of the U.S. through the USACE Nationwide Permit or Individual Permit Programs based on the area subject to temporary and permanent effects.
Clean Water Act (33 United States Code Section 1344– Section 401 (1972)	Section 401 of the CWA protects water quality by regulating the dumping or flow of pollutants into streams, lakes, and rivers.
Executive Order 13112 (3 Code of Federal Regulations 13112) (1999); Executive Order 13751 (81 Code of Federal Regulations 88609) – Invasive Species (2016)	EO 13112 directs all federal agencies to refrain from authorizing, funding, or carrying out actions or projects that may spread invasive species. EO 13751 continues coordinated federal prevention and control efforts related to invasive species.
State	
California Endangered Species Act (1970)	The California Endangered Species Act prohibits the take of listed species, except as otherwise provided in state law.
California Fish and Game Code - Section 2080 and 2081	Section 2080 of the California Fish and Game Code prohibits take, importation, exportation, possession, purchase, and sale of any species that are determined to be endangered or threatened. The California Endangered Species Act allows for take incidental to otherwise lawful activity under the provisions of Section 2081(b).
California Fish and Game Code - Sections 3503 and 3503.5	Sections 3503 and 3503.5 of the California Fish and Game Code provide regulatory protection to resident and migratory birds and all birds of prey within California.
California Fish and Game Code - Section 1602	Section 1602 of the California Fish and Game Code requires a permit for any activity that would result in the modification of the bed, bank, or channel of a stream, river, or lake, including water diversion and damming and removal of vegetation from a floodplain. This permit type governs both activities that modify the physical characteristics of the stream and activities that may affect fish and wildlife resource that use the stream and surrounding habitat (i.e., riparian vegetation or wetlands).
California Environmental Quality Act Guidelines Section 15380 – Rare or Endangered Species	CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered “rare” or “endangered” if the species can be shown to meet certain specified criteria. The criteria is modeled after the California Endangered Species Act and provides an agency with the ability to protect a species from a project’s potential impacts until the respective government agencies designate the species as protected, if warranted.

Table 3.7-1. Applicable Laws, Regulations, and Plans for Biological and Wetland Resources

Law or Regulation	Description
Local	
City of Vernon Tree Protection Bylaw #4152 (1996)	The City of Vernon's Tree Protection Bylaw #4152 restricts damage to trees (including pruning or removal of certain limbs), destruction of trees, and removal of trees. This applies to all trees within the City of Vernon that have a diameter greater than 8 centimeters at 1 meter above the ground at the base of the tree, except the following: • Trees on privately owned land that are contained on any lot zoned R1, R2, R3, and R4 that is less than 1,114 square meter (11,991.14 square feet); or • Trees that are part of a commercial fruit orchard; or • Trees that are Hazardous Trees and the damage is done by a utility company. Tree cutting/removal permits can be sought where a property owner has reason to require damage, destruction or removal of trees in Vernon. In general, each tree removed will need to be replaced by a new tree.

Notes:
CFR=Code of Federal Regulations; CEQA=California Environmental Quality Act; CWA=Clean Water Act; EIS=Environmental Impact Statement; EO=Executive Order; FR=Federal Register; FRA=Federal Railroad Administration; MBTA=Migratory Bird Treaty Act; USACE=United States Army Corps of Engineers; USFWS=United States Fish and Wildlife Service; U.S.=United States

3.7.2 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the Malabar Yard railroad improvements would affect or conflict with:

- Federally and state listed or candidate plant or animal species;
- Nesting birds protected by the Migratory Bird Treaty Act (MBTA);
- Wildlife movement; and,
- A tree preservation ordinance.

Geographic Area Considered

The geographic boundary used to evaluate biological and wetland resources is referred to as the BSA. The BSA corresponds to the Project footprint for the design options considered at each location (49th Street and 46th Street) and is inclusive of where all project effects including noise, vibration, dust, and all other construction activities that may affect biological resources may occur.

Methodology

Desktop Analysis

Due to the urbanized environment and lack of native vegetation communities within the BSA, a biological survey was not conducted for the BSA. A desktop analysis was conducted to assess potential effects on biological and wetland resources. The desktop analysis involved looking at aerial imagery to identify if there were any areas with vegetation or other land cover types (e.g., buildings with eaves/rafters) that would support special-status biological resources such as protected trees or special-status bats. In 2023, a windshield survey was conducted to verify and ground truth the existing conditions match the desktop assessment.

Vegetation Communities and Land Cover Types. Mapping of vegetation communities and land cover types included a desktop assessment of aerial and satellite imagery. Due to the lack of native vegetation communities in the BSA, land cover types applicable to urban/developed areas and disturbed habitats were used.

Special-Status Plant Species. The BSA consists of paved surfaces, buildings, ornamental landscaping, and bare ground. The evaluation regarding the suitability of habitat for federally and state listed or candidate plant species was based on the species' range, the presence of known occurrences in the vicinity of the BSA, analysis of aerial and satellite imagery, and the presence of potential habitat (including suitable soils) within the BSA. A desktop assessment of aerial and satellite imagery conducted in 2019 determined that site conditions are not conducive to providing habitat for federally and state listed or candidate plant species.

Special-Status Wildlife Species. A desktop assessment of aerial and satellite imagery was conducted in 2019 to assess current site conditions and determine areas that provide suitable habitat for federally and state listed or candidate wildlife species. Included in this determination were known species' ranges and sensitivities to "edge" effects (nearness to unsuitable habitat areas). No formal wildlife surveys (including protocol surveys for listed species) were conducted.

Research

Existing background information, including known occurrences of federally listed or candidate plant and wildlife species in the vicinity of Malabar Yard railroad improvements, was reviewed to determine the potential for biological and aquatic resources, including wetlands and waters of the United States (U.S.), to occur within the BSA. The following publicly available databases were reviewed:

- The California Natural Diversity Database (California Department of Fish and Wildlife [CDFW] 2020), for the nine United States Geological Survey (USGS) 7.5-minute quadrangle maps that include the BSA, was accessed to document the presence or absence of federally listed or candidate plant and wildlife species in the BSA.
- The USFWS Online Critical Habitat Portal (USFWS 2021) was accessed to document the presence or absence of federally designated critical habitat within the BSA.

- USFWS Information, Planning, and Consultation System (IPaC) (USFWS 2023) consultation was initiated. A list of threatened, endangered, and proposed species, designated critical habitat, and candidate plant and wildlife species that may occur within the BSA and/or be affected by the Malabar Yard railroad improvements was generated.
- U.S. Department of Agriculture Web Soil Survey (U.S. Department of Agriculture Natural Resources Conservation Service 2019) was accessed to support the evaluation of the potential for occurrence of federally listed or candidate plant species.

After the desktop analysis and research was performed, a list of special-status plant and wildlife species with known occurrences in the nine USGS quad maps, including the BSA, was created (see Appendix E of this document). All species on this list were evaluated based on existing site conditions to determine whether there was potential for the species to occur within the BSA.

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects for each of the topics considered is presented below.

Federally and State Listed or Candidate Plant or Animal Species

Potential effects were evaluated based on observed site conditions and the potential presence of sensitive biological resources. In conducting the effects analysis for biological resources, three principal factors were taken into consideration:

- Intensity (i.e., magnitude of the effect);
- Uniqueness (rarity) of the affected resource; and,
- Resource sensitivity.

The evaluation considered the interrelationship of these three components. For example, a relatively small magnitude of effect would be required to result in an adverse effect on a listed or candidate species or associated habitat if the species is very rare and believed to be very susceptible to disturbance. Conversely, common wildlife species found in urban areas are not typically rare or sensitive to disturbance. Therefore, a much larger magnitude of effect would be required to result in an adverse effect.

Nesting Birds Protected by the MBTA

Project-related effects would be considered adverse if the Malabar Yard railroad improvements result in a take of nesting birds or eggs due to removal of suitable habitat that supports breeding, roosting, and foraging birds protected by the MBTA or increases the risk of construction noise, vibration, dust, night lighting, and human encroachment, reducing nesting success.

Wildlife Movement

Project-related effects would be considered adverse if the Malabar Yard railroad improvements physically obstructs wildlife movement through the addition of new infrastructure or increases noise and light causing an interference with an animal's ability to communicate, navigate, and avoid predators or other dangers.

Conflict with a Tree Preservation Ordinance

Project-related effects would be considered adverse if the Malabar Yard railroad improvements damage, destroy, or require removal of a tree without a tree cutting/removal permit approved by the City of Vernon pursuant to the City of Vernon Tree Protection Bylaw #4152. The removal of any tree without proper approvals would constitute a conflict with the ordinance.

3.7.3 Affected Environment

Vegetation Communities and Land Cover Types

The BSA occupies 7.06 acres, including 6.87 acres of urban/developed and 0.19 acres of disturbed habitat (see Figure 3.7-1). The majority of the BSA is made up of paved roadways, buildings, railroad tracks, and parking lots. Disturbed habitat includes areas that have been previously physically disturbed but continue to retain a soil substrate and that consist of predominantly non-native plant species.

Botanical Species

Special-status plant species include those listed by USFWS as threatened or endangered, or species considered candidates for listing by USFWS and CDFW. The IPaC and California Natural Diversity Database record search results indicated 11 special-status plant species with known occurrences within the nine USGS quad maps, including and surrounding the BSA. Table 3.7-2 lists each of these plant species, including their status, habitat requirements, and an explanation as to why they are not expected to occur within the BSA. Due to the lack of suitable soils and/or habitat within the BSA, none of these special-status plant species is expected to occur within the BSA.

Invasive or Non-native Botanical Species

Invasive or non-native plant species include all species that do not naturally occur in an area, while invasive species do more harm to the environment by outcompeting native species or destroying nearby habitat. Invasive species may affect native species, including special-status species, by directly competing for resources, introducing or spreading diseases, reducing the complexity and biodiversity of ecosystems, and altering soil chemistry and water availability. The BSA is located within an entirely developed or disturbed area where invasive or non-native plant species may persist; however, suitable habitat for native plant species is limited or absent. Invasive or non-native plant species associated within urban areas may include, but are not limited to, cheatgrass (*Bromus tectorum*), pampas grass (*Cortaderia selloana*), and highway iceplant (*Carpobrotus edulis*).

Figure 3.7-1. Vegetation Communities and Land Cover Types within the Biological Study Area

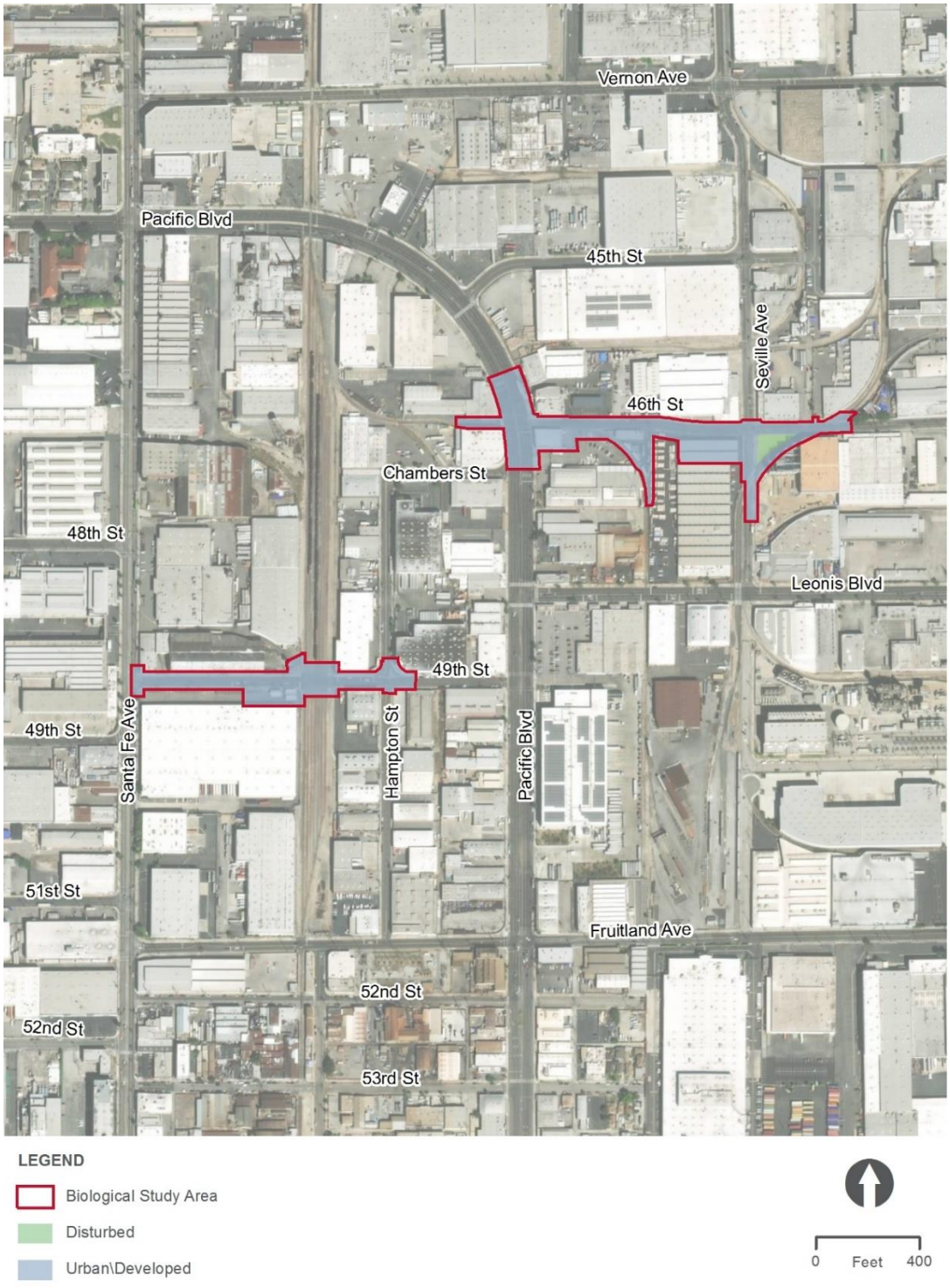

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Table 3.7-2. Special-Status Plant Species Potentially Occurring or Known to Occur in the Vicinity of the Biological Study Area

Common Name	Scientific Name	Federal Status	State Status	General Habitat Description	Habitat	Rationale
CARROT FAMILY	**APIACEAE**					
San Diego button-celery	*Eryngium aristulatum* var. *parishii*	Federally endangered	State endangered	Annual/Perennial herb. Occurs in mesic soils in coastal scrub, valley and foothill grassland, and vernal pools from 66 to 2,034 feet (20 to 620 meters) above mean sea level. Blooms April through June.	Absent	Not expected. The BSA does not support suitable soils or habitat.
BARBERRY FAMILY	**BERBERIDACEAE**					
Nevin's barberry	*Berberis nevinii*	Federally endangered	State endangered	Annual herb. Occurs in sandy or gravelly soils in chaparral, cismontane woodland, coastal scrub, and riparian scrub from 900 to 2,707 feet (274 to 825 meters) above mean sea level. Blooms February through June.	Absent	Not expected. The BSA does not support suitable soils or habitat and occurs below the known elevation range for this species.
MUSTARD FAMILY	**BRASSICACEAE**					
Gambel's water cress	*Nasturtium gambelii*	Federally endangered	Stated threatened	Perennial rhizomatous herb. Occurs in freshwater or brackish marshes and swamps from 16 to 1,083 feet (5 to 330 meters) above mean sea level. Blooms April through October.	Absent	Not expected. The BSA does not support suitable habitat.

Table 3.7-2. Special-Status Plant Species Potentially Occurring or Known to Occur in the Vicinity of the Biological Study Area

Common Name	Scientific Name	Federal Status	State Status	General Habitat Description	Habitat	Rationale
PINK FAMILY	**CARYOPHYLLACEAE**					
Marsh sandwort	*Arenaria paludicola*	Federally endangered	State endangered	Perennial stoloniferous herb. Occurs in sandy openings in freshwater or brackish marshes and swamps from 10 to 558 feet (3 to 170 meters) above mean sea level. Blooms May through August.	Absent	Not expected. The BSA does not support suitable habitat.
PEA FAMILY	**FABACEAE**					
Braunton's milkvetch	*Astragalus brauntonii*	Federally endangered	None	Perennial herb. Occurs in recent burns or disturbed areas, usually sandstone with carbonate layers in chaparral, coastal scrub, and valley and foothill grassland from 13 to 2,100 feet (4 to 640 meters) above mean sea level. Blooms January through August.	Absent	Not expected. The BSA does not support suitable soils or habitat.
Ventura marsh milkvetch	*Astragalus pycnostachyus* var. *lanosissimus*	Federally endangered	State endangered	Perennial herb. Occurs in coastal dunes, coastal scrub, and the edges of coastal salt or brackish marshes and swamps below 115 feet (35 meters) above mean sea level. Blooms June through October.	Absent	Not expected. The BSA does not support suitable habitat and occurs above the known elevation range for this species.
Coastal dunes milkvetch	*Astragalus tener* var. *titi*	Federally endangered	State endangered	Annual herb. Often occurs in vernally mesic areas in sandy coastal bluff scrub, coastal dunes, and coastal prairie below 165 feet (50 meters) above mean sea level. Blooms March through May.	Absent	Not expected. The BSA does not support suitable soils or habitat and occurs above the known elevation range for this species.

Table 3.7-2. Special-Status Plant Species Potentially Occurring or Known to Occur in the Vicinity of the Biological Study Area

Common Name	Scientific Name	Federal Status	State Status	General Habitat Description	Habitat	Rationale
GRASS FAMILY	**POACEAE**					
California Orcutt grass	*Orcuttia californica*	Federally endangered	State endangered	Annual herb. Occurs in vernal pools from 50 to 2,165 feet (15 to 660 meters) above mean sea level. Blooms April through August.	Absent	Not expected. The BSA does not support suitable habitat.
PHLOX FAMILY	**POLEMONIACEAE**					
Spreading navarretia	*Navarretia fossalis*	Federally threatened	None	Annual herb. Occurs in chenopod scrub, shallow freshwater marshes and swamps, playas, and vernal pools from 98 to 2,150 feet (30 to 655 meters) above mean sea level. Blooms April through June.	Absent	Not expected. The BSA does not support suitable habitat.
BUCKWHEAT FAMILY	**POLYGONACEAE**					
San Fernando Valley spineflower	*Chorizanthe parryi* var. *fernandina*	None	State endangered	Sandy soil in coastal scrub and grassland. Elevation: 492–4,002 feet. Blooming period: April–July.	Absent	Not expected. The BSA does not support suitable habitat.
Slender-horned spineflower	*Dodecahema leptoceras*	Federally endangered	State endangered	Annual herb. Occurs in sandy soils in chaparral, cismontane woodland, and alluvial fan sage scrub from 656 to 2,493 feet (200 to 760 meters) above mean sea level. Blooms April through June.	Absent	Not expected. The BSA does not support suitable habitat and occurs below the known elevation range for this species.

Notes:
BSA=biological study area

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Wildlife Species

Special-status wildlife species are animal species or subspecies listed as threatened, endangered, or a candidate for listing by USFWS and CDFW. Sensitive wildlife species also include migratory bird species protected by the MBTA.

The IPaC and California Natural Diversity Database record search results indicated 10 special-status wildlife species with known occurrences may be present within the nine USGS quad maps including and surrounding the BSA. Table 3.7-3 lists each of these wildlife species, including their status, habitat requirements, and an explanation as to why they are not expected to occur within the BSA. Due to the lack of suitable habitat within the BSA, none of these special-status wildlife species is expected to occur within the BSA. No federally designated or proposed critical habitat occurs within the BSA. Non-special status wildlife species, such as, domestic pets, raccoons (*Procyon lotor*), opossums (*Didelphis virginiana*), or other animals that have adapted to the urban setting likely occur within the BSA.

The western mastiff bat (*Eumops perotis californicus*) and western yellow bat (*Lasiurus xanthinus*) are CDFW species of special concern that have a very low potential of occurring within the BSA. The western mastiff bat generally occurs throughout all of southern California within open, arid, or semi-arid habitats and can roost within rock crevices or buildings. The western yellow bat ranges within most of southern California and generally occurs within riparian, palm oasis, and desert wash habitats and can roost in palm trees. The surrounding buildings within the BSA may be suitable for roosting habitat; however, the area is highly disturbed due to human activity and species utilizing those buildings would be adapted to these urban settings.

Migratory Birds

Suitable habitat in the BSA that would support breeding, roosting, and foraging migratory and nesting birds protected by the MBTA includes limited mature trees (greater than 24 inches in diameter), utility poles, and building rafters and eaves, which occur throughout the BSA. Migratory bird species expected to occur in the BSA based on the presence of suitable habitat include, but are not limited to, American crow (*Corvus brachyrhynchos*), house finch (*Carpodacus mexicanus*), and other urban adapted species.

Wetlands and Other Waters of the United States

No wetlands or other waters of the U.S., subject to United States Army Corps of Engineers (USACE) jurisdiction, are present in the BSA. Based on these findings, no CWA Section 401 or 404 permits are required.

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Table 3.7-3. Special-Status Wildlife Species Potentially Occurring or Known to Occur in the Vicinity of the Biological Study Area

Common Name	Scientific Name	Federal Status	State Status	General Habitat Description	Habitat	Rationale
INSECTS	***ARTHROPODA***					
Crotch bumble bee	*Bombus crotchii*	None	State candidate endangered	Requires habitat with a sufficient supply of floral resources to provide continuous blooming throughout the colony season, including lupines (*Lupinus* spp.) and California poppy (*Eschscholzia californica*), and nectaring on horsemints (*Agastache* spp.) and mountain pennyroyal (*Monardella odoratissima*). They may collect both pollen and nectar from vetches (*Vicia* ssp.) and also rob nectar from these plants.	Absent	Not expected. The BSA lacks suitable habitat or flowering species for this species.
Monarch Butterfly	*Danaus plexippus*	Candidate	None	Wide ranging based on presence of host plants. Typically found near agricultural fields, pastureland, prairie remnants, urban and suburban areas, gardens, roadsides.	Absent	Not Expected. The BSA lacks suitable habitat for this species.
AMPHIBIANS	***AMPHIBIA***					
Arroyo toad	*Anaxyrus californicus*	Federally endangered	None	Breeding habitat consists of slow-moving streams with shallow pools, nearby sandbars, and adjacent stream terraces. Often breed in shallow, sandy pools bordered by sand/gravel flood terraces. Inhabit upland habitats when not breeding, such as sycamore-cottonwood woodlands, oak woodlands, coastal sage scrub, chaparral, and grassland.	Absent	Not expected. The BSA lacks suitable habitat for this species.
Southern mountain yellow-legged frog	*Rana muscosa*	Federally endangered	State endangered	Streams, rivers, perennial creeks with bank and pool substrates. Open gravel banks and rocks projecting above or just beneath the surface and downed logs and branches.	Absent	Not expected. The BSA lacks suitable habitat for this species.

Table 3.7-3. Special-Status Wildlife Species Potentially Occurring or Known to Occur in the Vicinity of the Biological Study Area

Common Name	Scientific Name	Federal Status	State Status	General Habitat Description	Habitat	Rationale
BIRDS	***AVES***					
Tricolored blackbird	*Agelaius tricolor*	None	State threatened	Preferred nesting habitat includes cattails (*Typha* spp.), bulrushes (*Schoenoplectus* spp.), Himalayan blackberry (*Rubus armeniacus*), and agricultural silage. Needs access to open water.	Absent	Not expected. The BSA lacks suitable habitat for this species.
Swainson's hawk	*Buteo swainsoni*	None	State threatened	Nests in oak savanna and cottonwood riparian areas adjacent to foraging habitat of grasslands, agricultural fields, and pastures Increasingly also nests in sparse stands of gum trees (*Eucalyptus* spp.) and Australian pines (*Casuarina equisetifolia*) and often forages along roadsides and grassy highway medians.	Absent	Not expected. The BSA lacks suitable habitat for this species.
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Federally threatened	State endangered	Riparian forest.	Absent	Not expected. The BSA lacks suitable habitat for this species.
Southwestern willow flycatcher	*Empidonax traillii extimus*	Federally endangered	State endangered	Nests in early successional, willow (*Salix*)-dominated riparian habitats.	Absent	Not expected. The BSA lacks suitable habitat for this species.
Coastal California gnatcatcher	*Polioptila californica*	Federally threatened	None	Coastal sage scrub dominated by California sagebrush (*Artemisia californica*).	Absent	Not expected. The BSA lacks suitable habitat for this species.
Bank swallow	*Riparia riparia*	None	State threatened	A colonial nester in riparian and lacustrine bluffs or cliffs with fine-textured or sandy soils into which the nest cavities are dug. Also nests in earthen banks as well as sand and gravel pits.	Absent	Not expected. The BSA lacks suitable habitat for this species.

Table 3.7-3. Special-Status Wildlife Species Potentially Occurring or Known to Occur in the Vicinity of the Biological Study Area

Common Name	Scientific Name	Federal Status	State Status	General Habitat Description	Habitat	Rationale
Least Bell's vireo	*Vireo bellii pusillus*	Federally endangered	State endangered	Dense brush and mesquite associated with riparian systems, willow-cottonwood forest, and streamside thickets.	Absent	Not expected. The BSA lacks suitable habitat for this species.

Notes:
BSA=biological study area

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Wildlife Dispersal Corridors and Linkages

The BSA is located within a developed urban area more than 5 miles from any significant open space patches. While there are larger open space patches north and east of the BSA, these areas are separated from the Malabar Yard railroad improvements by I-5 and I-10. The closest reach of the Los Angeles River, a concrete-lined flood control channel surrounded by urban, commercial, residential, and industrial development, is located less than 1 mile northeast of the BSA. The Los Angeles River may support some north to south movement for urban-adapted wildlife, but this function would be limited due to the lack of vegetated cover within the river. Furthermore, there is no vegetative cover within the BSA or between the BSA and the Los Angeles River. Therefore, the area within the BSA is not expected to function efficiently as a wildlife movement or migration corridor.

Habitat Conservation Plan

The BSA is not located within the boundary of an approved habitat conservation plan, natural community conservation plan, significant ecological area, or other approved local, regional, or state habitat conservation plan. The nearest adopted significant ecological area is Griffith Park, approximately 10 miles northwest of the BSA.

Tree Preservation Ordinance

The BSA is located in the City of Vernon and would be subject to the City's Tree Protection Bylaw #4152. Based on a review of aerial imagery, approximately eight trees occur along the sidewalk of the proposed 49th Street improvements and approximately five trees are located along the Bandwagon Brokerage, Inc. building along 46th Street.

3.7.4 Environmental Consequences

No Action Evaluation

The following topics were evaluated to determine potential effects if the Malabar Yard railroad improvements in the City of Vernon were not implemented in conjunction with the Build Alternative.

Nesting Birds Protected by the MBTA

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects on nesting birds protected by the MBTA would occur because suitable habitat would not be disturbed within the Malabar Yard study area.

Conflict with Tree Preservation Ordinance

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects associated with a conflict with a tree preservation ordinance would occur because trees within the Malabar Yard study area would not be damaged, destroyed, or removed.

Evaluation of Malabar Yard Railroad Improvements

TOPIC 3.7-A	Nesting birds protected by the MBTA

Direct Effects – Construction

Suitable habitat that would support breeding, roosting, and foraging birds protected by the MBTA, including mature trees (greater than 24 inches in diameter), utility poles, building rafters and eaves, occurs in the BSA. Construction of the Malabar Yard railroad improvements has potential to affect nesting birds protected by the MBTA that are present in the BSA during construction. Direct effects on an active nest, including removal of mature trees, would be considered adverse because they could result in moderate reductions in population sizes of these species. Implementation of Malabar Yard Mitigation Measure BIO-1 (described in Section 3.7.5) requires vegetation removal (mature trees greater than 24 inches in diameter) to occur outside of the breeding season or preconstruction surveys to be performed prior to vegetation removal in areas with suitable nesting habitat if vegetation removal cannot be conducted outside of the nesting season. If nesting birds are found during preconstruction surveys, an exclusionary buffer suitable to prevent nest disturbance will be established by the biologist. Exclusionary devices will be installed over suitable nest sites to prevent nesting at buildings. In addition, prior to the start of construction, all Project personnel and contractors who will be on site during construction will complete a mandatory Worker Environmental Awareness Program training conducted by the Project Biologist or a designated qualified biologist. Implementation of Malabar Yard Mitigation Measure BIO-1 would minimize construction effects on nesting birds protected by the MBTA. Therefore, with the implementation of Malabar Yard Mitigation Measure BIO-1, no direct adverse effect would occur.

Direct Effects – Operations

Any birds utilizing the area for breeding during operations are expected to be adapted to an urban environment, including navigating transportation corridors. Although there is a slight increase in potential for mortality (e.g., collisions with trains) resulting from increased train traffic, mortality rates would not likely be substantially higher than pre-project mortality rates due to the frequency of train movements in and out of Malabar Yard. Therefore, direct effects of operations on these species (e.g., being struck by a train) are not anticipated to be substantially different than under existing conditions and would not substantially reduce regional population sizes for nesting birds protected by the MBTA. Therefore, no direct adverse effect would occur.

Indirect Effects – Construction and Operations

Construction and operation of the Malabar Yard railroad improvements could result in indirect effects on MBTA-protected bird species that may be present within the BSA. Indirect effects on an active nest include increased construction noise above ambient noise levels, vibration, excess dust, night lighting, and human encroachment, all of which may result in nest failure. This is considered an adverse effect. To avoid effects on resources protected under the MBTA, implementation of Malabar Yard Mitigation Measure BIO-1 (described in Section 3.7.5) requires

vegetation (i.e, nesting habitat) to be removed outside of the breeding season (generally between February 1 and September 30). If vegetation cannot be removed outside of the breeding season, then preconstruction nesting bird surveys would be required prior to vegetation removal. If nesting birds are found during preconstruction surveys, Malabar Yard Mitigation Measure BIO-1 requires the Project Biologist or a designated qualified biologist to establish an exclusionary buffer, of suitable width, to prevent nest disturbance. Buffer widths that are typically accepted by the state and federal wildlife agencies range from 150 feet for nesting birds to 500 feet for nesting raptors; however, buffer widths may vary widely depending on location, project, and species. In addition, agencies and local field offices may have more specific buffer distances. Implementation of Malabar Yard Mitigation Measure BIO-1 would minimize indirect effects on MBTA-protected bird species during construction.

Indirect operational effects may include increased noise, vibration, night lighting, and human encroachment, which may reduce the likelihood of MBTA-protected bird species from nesting in proximity to the Malabar Yard railroad improvements but are not anticipated to result in take of nesting birds or eggs or other unlawful actions. However, the indirect operational effects may cause MBTA-protected bird species to shift their population distribution or migration route as an avoidance measure. Due to the developed and highly disturbed setting of the BSA, birds nesting within the area are already urban adapted and are not expected to be any more significantly disturbed than existing conditions. The indirect operational effects would be localized and not result in reduced nesting success or take. Therefore, no indirect adverse effect would occur.

Based on the analysis above and strict accordance with Malabar Yard Mitigation Measure BIO-1, no indirect adverse effect would occur during construction or operation. If unanticipated impacts occur, Metro will work with the appropriate resource agencies to determine the appropriate corrective action.

TOPIC 3.7-B	Conflict with a tree preservation ordinance

Direct Effects – Construction

Based on a review of aerial imagery, approximately eight trees occur along the sidewalk of the proposed 49th Street improvements and approximately five trees are located along the Bandwagon Brokerage, Inc. building along 46th Street. These trees are within or adjacent to the BSA. Therefore, construction of the Malabar Yard railroad improvements may result in damage to trees, destruction of trees, and/or removal of trees. The City of Vernon's Tree Protection Bylaw #4152 restricts damage to trees (including pruning or removal of certain limbs), destruction of trees, and removal of trees. This applies to all trees within the City of Vernon that have a diameter greater than 8 centimeters at 1 meter above the ground at the base of the tree. Tree cutting/removal permits must be obtained prior to damage, destruction, or removal of trees in Vernon. The cutting and/or removal of any tree without a permit would conflict with City of Vernon's Tree Protection Bylaw #4152 and could be considered an adverse effect if not avoided. Implementation of Malabar Yard Mitigation Measure BIO-2 (described in Section 3.7.5) requires the contractor to comply with the City of Vernon's Tree Protection Bylaw #4152 by obtaining tree

cutting / removal permits prior to construction activities. In general, each tree removed will need to be replaced by a new tree. A security in the form of a cash deposit or letter of credit to secure the full amount of the cost of replacing the trees that are to be destroyed pursuant to the said permit. Therefore, with the implementation of Malabar Yard Mitigation Measure BIO-2, no direct adverse effect would occur.

Direct Effects – Operations

Once constructed, the Malabar Yard railroad improvements would not require the removal of additional trees. Future maintenance activities would be required throughout the duration of operation, but no pruning or vegetation clearing would be required to keep the railroad corridor free of debris because no trees are located or proposed within the railroad ROW. Therefore, no direct adverse effect would occur.

Indirect Effects – Construction and Operations

Trenching, grading, soil compaction, and the placement of fill or impervious surfaces within the driplines of trees could lead to root damage ultimately resulting in death of the tree. This could be considered an adverse effect if not avoided because the Malabar Yard railroad improvements could result in the death and ultimately removal of a tree. Pursuant to the City of Vernon's Tree Protection Bylaw #4152, each tree removed will need to be replaced by a new tree. Implementation of Malabar Yard Mitigation Measure BIO-2 (described in Section 3.7.5) requires a security in the form of a cash deposit or letter of credit to secure the full amount of the cost of replacing the trees that are to be destroyed by the construction of the Malabar Yard railroad improvements. Therefore, with the implementation of Malabar Yard Mitigation Measure BIO-2, no indirect adverse effect would occur during construction or operations.

3.7.5 Mitigation Measures

Implementation of the following mitigation measures would avoid or minimize potential adverse effects on biological and wetland resources. Mitigation measures for the Malabar Yard railroad improvements include "MY" in the nomenclature as shown below.

MY BIO–1 **MBTA species:** During construction, vegetation removal shall be conducted outside of the bird nesting season (February 1 through September 30) to the extent feasible. If vegetation removal cannot be conducted outside of the nesting season, a CDFW-approved qualified avian biologist shall conduct preconstruction surveys to locate active nests within 72 hours prior to vegetation removal in each area with suitable nesting habitat, including surrounding buildings, eaves, telephone poles, bushes, or trees. If nesting birds are found during preconstruction surveys, an exclusionary buffer (150 feet for passerines and 500 feet for raptors) suitable to prevent nest disturbance shall be established by the biologist. The buffer may be adjusted based on species-specific and site-specific conditions as determined by the qualified biologist or consultation from the wildlife agencies. This buffer shall be clearly marked in the field by construction personnel under the guidance of the

biologist, and construction or vegetation removal shall not be conducted within the buffer until the biologist determines that the young have fledged or the nest is no longer active.

Exclusionary devices (hard surface materials, such as plywood or plexiglass, flexible materials, such as vinyl, or a similar mechanism that keeps birds from building nests) shall be installed over suitable nest sites at buildings, or other structures that will be removed before the nesting season (February 1 through September 30) to prevent nesting at the bridges, buildings, or other structures by bridge- and crevice-nesting birds (i.e., swifts and swallows). Netting shall not be used as an exclusionary material because it can injure or kill birds, which would be in violation of the MBTA.

Removal of partially constructed nests shall be conducted under the guidance and observation of a qualified biologist. Removal of partially constructed swallow nests shall be repeated as frequently as necessary to prevent nest completion. Removal of nest materials and exclusion device installation shall be monitored by a qualified biologist. Such exclusion efforts shall be continued to keep the structures free of swallows until October or the completion of construction. Metro's Resident Engineer or designated contractor shall ensure that all Project personnel and contractors who will be on site during construction complete mandatory training conducted by the Project Biologist or a designated qualified biologist. Any new Project personnel or contractors that come on board after the initiation of construction shall also be required to complete the mandatory Worker Environmental Awareness Program training before they commence with work. The training shall advise workers of potential impacts on jurisdictional resources. At a minimum, the training shall include the following topics: (1) occurrences of special-status species and special-status vegetation communities in the Project area (including vegetation communities subject to USACE, CDFW, and Regional Water Quality Control Board [RWQCB] jurisdiction), (2) the purpose for resource protection; (3) protective measures to be implemented in the field, including strictly limiting activities, vehicles, equipment, and construction materials to the fenced to avoid jurisdictional resource areas in the field (i.e., avoid areas delineated on maps or on the Project site by fencing); (4) environmentally responsible construction practices; and (5) the protocol to resolve conflicts that may arise at any time during the construction process.

MY BIO-2 **Protected Trees:** Prior to construction, the locations and sizes of trees shall be identified and overlaid on Project footprint maps for the selected design options to determine which trees may be protected in accordance with the City of Vernon's Tree Protection Bylaw #4152. This applies to all trees within the City of Vernon that have a diameter greater than 8 centimeters at 1 meter above the ground at the base of the tree. Any protected trees that would undergo damage (including pruning or removal of certain limbs), destruction, or removal as a result of the

Malabar Yard railroad improvements would require a tree cutting/removal permit from the City of Vernon. Any protected trees that must be removed due to Project construction shall be replaced by a new tree. As a condition to the granting of a tree cutting/removal permit, Metro's designated contractor shall be required to provide the following to the City of Vernon Community Development Director:

(a) A security in the form of a cash deposit or letter of credit to secure the full amount of the cost of replacing the trees that are to be destroyed pursuant to the said permit; and

(b) A plan or plans identifying:

i. The trees proposed to be cut or removed;

ii. The trees proposed to be retained; and

iii. The trees proposed to be provided in replacement of the trees that are to be cut or removed.

3.8 Floodplains, Hydrology, and Water Quality

This section provides an evaluation of potential effects related to floodplains, hydrology, and water quality that may result from implementation of the Malabar Yard railroad improvements.

3.8.1 Regulatory Framework

Table 3.8-1 identifies and summarizes applicable laws, regulations, and plans relative to floodplains, hydrology, and water quality.

Table 3.8-1. Applicable Laws, Regulations, and Plans for Floodplains, Hydrology, and Water Quality

Law, Regulation, or Plan	Description
Federal	
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(2 and 8)*, 64 *Federal Register* 28545-28556 (1999)[1]	*FRA's Procedures for Considering Environmental Impacts* indicate that an EIS shall consider the consistency of the alternatives with federal and state standards concerning drinking water, storm sewer drainage, sedimentation control, and non-point source discharges and the need for Section 402 or 404 permits. Additionally, an analysis of the projects' location within the base of any floodplains should be conducted with a discussion of risk associated with the alternative, effects on the floodplain, the degree to which the alternative supports incompatible development in the base floodplain, and methods proposed to reduce harm.
Federal Emergency Management Agency National Flood Insurance Act (42 United States Code 4001 et seq) (1968)	The National Flood Insurance Act of 1968 is legislation that created the National Flood Insurance Program. FEMA administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations that limit development in floodplains. FEMA also issues Flood Insurance Rate Maps that identify which land areas are subject to flooding and flood hazard zones in the community. The design standard for flood protection covered by the Flood Insurance Rate Maps is established by FEMA, with the minimum level of flood protection for new development determined to be the 1-in-100 (0.01) annual exceedance probability (i.e., the 100-year flood event).
Flood Disaster Protection Act (42 United States Code 4001 to 4128) (1973)	The Flood Disaster Protection Act is a law that expanded the national flood insurance program and required flood-prone communities and property owners to participate in it. The law aimed to reduce flood-related losses and provide financial assistance to flood victims through insurance rather than loans. The law also mandated financial institutions to require flood insurance on loans secured by improved real estate in special flood hazard areas designated by FEMA. The law also encouraged local officials to adopt and

[1] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

Table 3.8-1. Applicable Laws, Regulations, and Plans for Floodplains, Hydrology, and Water Quality

Law, Regulation, or Plan	Description
	enforce minimum floodplain management standards to minimize future flood damage.
Clean Water Act (33 United States Code §1341 [1972])	The CWA of 1972 is the primary federal law that governs and authorizes the U.S. EPA and the states to implement activities to control water quality. The following are important CWA sections: • Section 102 states that parties involved prepare or develop comprehensive programs for preventing, reducing, or eliminating the pollution of the navigable waters and ground waters and improving the sanitary condition of surface and underground waters. • Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines. • Section 402 establishes the NPDES, a permitting system to control point source discharges from industrial, municipal, and other facilities if their discharges go directly to surface waters (except for dredge or fill material). The RWQCB administers this permitting program in California. Section 402(p) requires permits for discharges of stormwater from industrial/construction and MS4s. The SWRQCB and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA and regulating discharges to ensure compliance with the water quality standards.
Federal Antidegradation Policy (40 Code of Federal Regulations §131.12)	The Federal Antidegradation Policy is designed to protect existing uses, water quality, and national water resources.
Executive Order 11988 (42 Code of Federal Regulations 26971) - Floodplain Management, May 24, 1977	EO 11988 requires that federal agencies avoid or minimize adverse effects of occupancy and modifications of floodplains and to avoid direct and indirect support of development in floodplains if there is a practicable alternative.
Department of Transportation Order 5650.2 – Floodplain Management and Protection	On April 23, 1979, the USDOT issued Order 5650.2 regarding floodplain management and protection with the purpose of avoiding and mitigating adverse floodplain effects in agency actions, planning programs, and budget requests.
State	
Porter-Cologne Water Quality Control Act (California Water Code, § 13000 et seq.) (1969)	The California Water Code is California's statutory authority for the protection of water quality. Under this act, the state must adopt water quality policies, plans, and objectives that protect the state's waters. Unlike the CWA, which regulates only surface water, the Porter-Cologne Water Quality Control Act regulates surface water, groundwater, and discharges to land.

Table 3.8-1. Applicable Laws, Regulations, and Plans for Floodplains, Hydrology, and Water Quality

Law, Regulation, or Plan	Description
Cobey-Alquist Flood Plain Management Act (California Water Code, Section 8400 et seq.) (1965)	The Cobey-Alquist Floodplain Management Act encourages local governments to plan, adopt, and enforce floodplain management regulations (California Water Code Section 8400, et seq.). Where a federal flood control project report has been issued designating floodway boundaries, the Department of Water Resources or the State Reclamation Board will not appropriate money in support of the project unless the applicable agency has enacted floodplain regulations. Those regulations must provide that: Construction of structures in the floodway that may endanger life or significantly reduce its carrying capacity shall be prohibited. Development will be allowed within the "restrictive zone" between the floodway and the limits of the floodplain as long as human life and the carrying capacity of the floodplain are protected (California Water Code Section 8410).
Water Quality Control Plan, Los Angeles Region (Basin Plan) (2014)	The Basin Plan prepared by the Los Angeles RWQCB (Region 4) outlines the regulatory process for the protection of the beneficial uses of all regional waters. According to the Basin Plan, the beneficial uses for surface water and groundwater established for the Los Angeles Region, which includes the Malabar Yard study area, are municipal; agricultural supply; industrial service supply; industrial process supply; groundwater recharge; water contact recreation; non-water contact recreation; warm freshwater habitat; and wildlife habitat.
California Toxics Rule (1994)	Under the California Toxics Rule, U.S. EPA has proposed water quality criteria for priority toxic pollutants for inland surface waters, enclosed bays, and estuaries. These federally promulgated criteria create water quality standards for California waters and satisfy CWA requirements.
National Pollutant Discharge Elimination System Industrial General Permit (2014)	The Statewide General Permit for Stormwater Discharges Associated with Industrial Activities, Order 2014-0057-DWQ IGP implements the federally required stormwater regulations in California for stormwater associated with industrial activities discharging to waters of the U.S. The IGP regulates discharges associated with 10 federally defined categories of industrial activities. The IGP requires the implementation of BMPs, a site-specific SWPPP, and monitoring plan. The IGP also includes criteria for demonstrating no exposure of industrial activities or materials to stormwater and no discharges to waters of the U.S.
National Pollutant Discharge Elimination System Construction General Permit (2022)	The CGP (Order No. 2009-0009-DWQ), adopted September 2, 2009, became effective July 1, 2010. This permit has since been amended twice by Orders No. 2010-0004-DWQ and 2012-0006-DWQ, which are currently in effect. However, during construction of the Malabar Yard railroad improvements, Order Number 2022-0057-DWQ will be in effect. This permit was adopted on September 8, 2022, and will become effective on September 1, 2023. The permit regulates stormwater and non-stormwater discharges from construction sites that result in a disturbed soil area of 1 acre or greater and/or are smaller sites that are part of a larger common plan of development. By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least 1 acre must comply with the provisions of the CGP. Construction activity that results in soil disturbances of less than 1 acre is subject to this CGP if there is potential for significant water quality impairment resulting from the

Table 3.8-1. Applicable Laws, Regulations, and Plans for Floodplains, Hydrology, and Water Quality

Law, Regulation, or Plan	Description
	activity as determined by the RWQCB. Operators of regulated construction sites are required to develop an SWPPP; implement sediment, erosion, and pollution prevention control measures; and obtain coverage under the CGP.
Local	
Municipal National Pollutant Discharge Elimination System Permit (2021)	The City of Vernon is a permittee under the Phase I NPDES Permit and Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles and Ventura Counties, Order Number R4-2021-0105 (NPDES Number CAS004004. The NPDES permit prohibits stormwater and non-stormwater discharges, sets limits on pollutants being discharged into receiving waters, and requires implementation of technology-based standards. Under the NPDES permit, the City as a permittee is responsible for the management of storm drain systems within its jurisdiction. Cities are required to implement management programs, monitoring programs, implementation plans, and all BMPs outlined in the MSWMP and to take any other actions as may be necessary to protect water quality to the maximum extent practicable. In addition, each city is required to implement an MSWMP and develop a long-term assessment strategy for effectiveness of the MSWMP. On July 23, 2021, the Los Angeles RWQCB adopted Order Number R4-2021-0105, the NPDES Stormwater Permit for the Counties of Los Angeles and Ventura and cities within (NPDES Number CAS004004). The permit was issued to Los Angeles County (principal permittee) and 95 cities (permittees) to reduce pollutants discharged from their MS4 to the maximum extent practicable statutory standard. The permit became effective September 11, 2021.
Los Angeles County Municipal Code	Stormwater discharge is regulated under Chapter 12.80 Stormwater and Runoff Pollution Control of the County of Los Angeles Municipal Code. Under Section 12.80.480, discharge of stormwater to the County storm drain system is permissible only when connection to the storm drain system is made in accordance with a valid county permit in conjunction with other required permits.
City of Vernon Stormwater Low Impact Development Ordinance (Ordinance #1216)	On November 2013, the City of Vernon amended Chapter 21, Article V Storm Drains of the Municipal Code to include stormwater pollution controls for specific new development and redevelopment projects termed Planning Priority Project (Ordinance No. 1216). These requirements are summarized in the City of Vernon LID Guidance Manual, which states that the City of Vernon utilizes the County of Los Angeles Department of Public Works LID Standards, Manual (February 2014) except as amended in the City LID Guidance Manual. The required LID document is referred to as a LID report. This LID ordinance identifies MS4 permit requirements, one of which requires projects that create impervious surfaces or replace 5,000 square feet of previously developed impervious surfaces to provide mitigation based on the LID Standards Manual and prepare an LID Plan. This condition only applies to non-ROW (private property) areas. For reconstruction of the improvements in the public ROW, the City Green Street Policy and Green Streets Manual, November 2013, is applicable. Projects within the City are required to comply

Table 3.8-1. Applicable Laws, Regulations, and Plans for Floodplains, Hydrology, and Water Quality

Law, Regulation, or Plan	Description
	with the requirements of the CGP and the Municipal NPDES Permit, which includes preparation of an SWPPP and implementation of construction and post-construction BMPs.
General Waste Discharge Requirements for Dewatering (2013)	On June 6, 2013, the Los Angeles RWQCB adopted the General Waste Discharge Requirements for Discharges of Groundwater from Construction and project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0095, NPDES No. CAG994004) (Dewatering Permit). This permit covers discharge of groundwater and non-stormwater construction dewatering discharges in the Los Angeles and Ventura County region.
City of Vernon General Plan (2007, amended 2015)	Circulation and Infrastructure Element • Action CI-11: Water Quality. Continue to maintain the quality of Vernon's drinking water by inspecting water well installations and monitoring general water quality. Continue to take routine water samples at various locations in the City and submit them to a water quality laboratory for analysis. Promote working with water agencies that supply water to Vernon to ensure adequate water quality. • Action CI-14: NPDES Compliance. Prior to making land use decisions, the City will utilize available methods to estimate increases in pollutant loads and flows resulting from projected future development. In addition, applicants for new development and redevelopment projects shall be required to demonstrate accomplishment of the following NPDES objectives: o Use of BMPs to mitigate projected increases in pollutant loads and flows. o Minimized pollutant loading during and after construction. o Limited disturbance of natural water bodies and natural drainage systems. o Pollution prevention methods, source controls, and treatment using small collection strategies located at, or as close as possible to, the source. • Action CI-16: Storm Drain Maintenance and Quality. As needed, prepare studies to determine the adequacy of the storm drain infrastructure for development proposals and/or to prevent localized flooding. Require developers to incorporate necessary improvements into the design of the project. Continue to monitor storm drains and water quality in an ongoing effort to prevent pollution of the storm drain system which leads directly to the Los Angeles River. Continue to monitor stormwater control activities through hazardous materials inspections and continue to provide educational materials for businesses regarding stormwater pollution. Land Use Element • Action LU-2: CEQA Compliance and Site Development Review. Comply with the CEQA in the review of proposed development projects. Use the review process to require projects to address environmental concerns,

Table 3.8-1. Applicable Laws, Regulations, and Plans for Floodplains, Hydrology, and Water Quality

Law, Regulation, or Plan	Description
	fund needed public facilities, recognize groundwater resources and water quality, minimize traffic impacts, be compatible with surrounding development, and comply with all use and development standards of the City.
General Waste Discharge Requirements for Dewatering from Contaminated Activities	On March 7, 2013, the Los Angeles RWQCB adopted the General Waste Discharge Requirements for Discharges of Treated Groundwater from Investigation and/or Cleanup of VOC --Contaminated Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0043, NPDES No. CAG914001) (Dewatering Permit for Contaminated Activities). This permit covers discharge of groundwater and non-stormwater construction dewatering waste that is contaminated in the Los Angeles and Ventura County region.

Notes:
BMP=Best Management Practice; CEQA=California Environmental Quality Act; CGP=Construction General Permit; CWA=Clean Water Act; DWQ=Division of Water Quality; EO=Executive Order; FEMA=Federal Emergency Management Agency; IGP=Industrial General Permit; LID=Low Impact Development; MS4=Municipal Separate Storm Sewer System; MSWMP=Municipal Stormwater Management Program; No.=Number; NPDES=National Pollutant Discharge Elimination System; RWQCB=Regional Water Quality Control Board; SWRCB=State Water Resources Control Board; SWPPP=Storm Water Pollution Prevention Plan; U.S.=United States; U.S. EPA=United States Environmental Protection Agency; USDOT=Department of Transportation; VOC=Volatile Organic Compound

3.8.2 Methods for Evaluating Environmental Effects

Topics Considered

For the Malabar Yard railroad improvements, an evaluation was performed to determine if they would affect:

- Drainage patterns, soil erosion, and siltation;
- Stormwater;
- Flooding; and/or
- Water quality standards and waste discharge requirements.

Geographic Area Considered

The Malabar Yard study area is generally used to describe the watersheds, surface waters, groundwater basins, and floodplains to characterize the affected environment. The maximum extent of the Project footprint for the design options considered for the Malabar Yard railroad improvements is the geographic boundary used to determine where potential impacts would occur on surface water resources adjoining, adjacent to, or downstream the Malabar Yard railroad improvement's location that could receive runoff and sediment.

Methodology

This section was prepared pursuant to the FRA's *Environmental Procedures for Considering Environmental Impacts* (1999), which requires an environmental evaluation of water quality and flood hazards. Relevant literature and maps were reviewed, including but not limited to, published flood maps, CWA Section 303(d) list, California Department of Water Resources website, Surface Water Ambient Monitoring Program, and the Los Angeles Basin Plan, to identify existing floodplains, hydrology, and water quality conditions that may be affected by the Malabar Yard railroad improvements. A list of these documents is provided in Chapter 9, References. Based on results of the literature review, an evaluation was conducted to determine the potential effects related to floodplains, hydrology, and water quality that may result from implementation of the Malabar Yard railroad improvements.

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the potential effects are described in Section 3.8.3 to determine if the Malabar Yard railroad improvements would result in beneficial or adverse effects.

Drainage Patterns, Soil Erosion, and Siltation

Project-related effects would be considered adverse if the Malabar Yard railroad improvements would alter existing drainage patterns in such a way that increases runoff or results in accumulation of sediment in downstream areas causing erosion or siltation on or off the site.

Stormwater

Project-related effects would be considered adverse if the Malabar Yard railroad improvements results in additional sources of polluted runoff, degrade water quality, or contribute an increase in stormwater runoff that would exceed the capacity of existing or planned drainage systems.

Flooding

Project-related effects would be considered adverse if the Malabar Yard railroad improvements introduces new infrastructure in a flood hazard area (100- or 500- year) that would impede or redirect flood flows or increase the exposure of people or structures to a significant risk of loss, injury, or death related to flooding or inundation beyond existing conditions.

Water Quality Standards and Waste Discharge Requirements

Project-related effects would be considered adverse if the Malabar Yard railroad improvements exceeds surface water quality objectives described in Table 3.8-2 or groundwater objectives in Table 3.8-3 in Section 3.8.3, Affected Environment, below.

3.8.3 Affected Environment

Floodplains

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map, Map Numbers 06037C1638G and 06037C1805F (FEMA 2023), the Malabar Yard study area is located in Zone X (area with minimal flood hazard) (Figure 3.8-1). Zone X represents an area that is determined to be outside the 0.2 percent annual chance flood (i.e., 500-year flood).

Hydrology

Regional Hydrology

The Malabar Yard study area is within the Los Angeles River watershed, which includes the Los Angeles River. The western portion of the watershed includes the Santa Monica Mountains, Simi Hills, and Santa Susana Mountains, while the eastern portion includes the San Gabriel Mountains (U.S. EPA 2020). The watershed encompasses, and is shaped by, the path of the Los Angeles River, which flows from its headwaters in the Simi Hills and Santa Susana Mountains to the Santa Monica Mountains, eastward to the northern corner of Griffith Park (Figure 3.8-2). Here, the channel turns southward through the Glendale Narrows before it flows across the coastal plain and into San Pedro Bay near Long Beach. The Los Angeles River has evolved from an uncontrolled, meandering river providing a valuable source of water for early inhabitants to a major flood protection waterway. The Los Angeles River watershed covers more than 824 square miles (Los Angeles RWQCB 2014a).

The Malabar Yard study area is located in the Compton Creek hydrologic subarea within the larger Lower Los Angeles River hydrologic area (U.S. EPA 2020).

Local Hydrology

The Los Angeles River is located approximately 0.5-mile northeast of the Malabar Yard study area. It is the primary drainage facility in the area and facilitates alluvial groundwater recharge through spreading basins. The portion of the Los Angeles River nearest the Malabar Yard study area is entirely concrete lined. This portion of the river is designated as Reach 2 in the Water Quality Control Plan for the Los Angeles River Basin, Region 4 (Basin Plan) (from Figueroa Street, City of Los Angeles [upstream], to Carson Street, City of Long Beach [downstream]) (Los Angeles RWQCB 2014b). Runoff from the Malabar Yard study area is discharged to various storm drain systems, some of which cross portions of the Malabar Yard study area and eventually to Reach 2 of the Los Angeles River (Los Angeles RWQCB 2014b).

Figure 3.8-1. Flood Insurance Rate Map for Malabar Yard

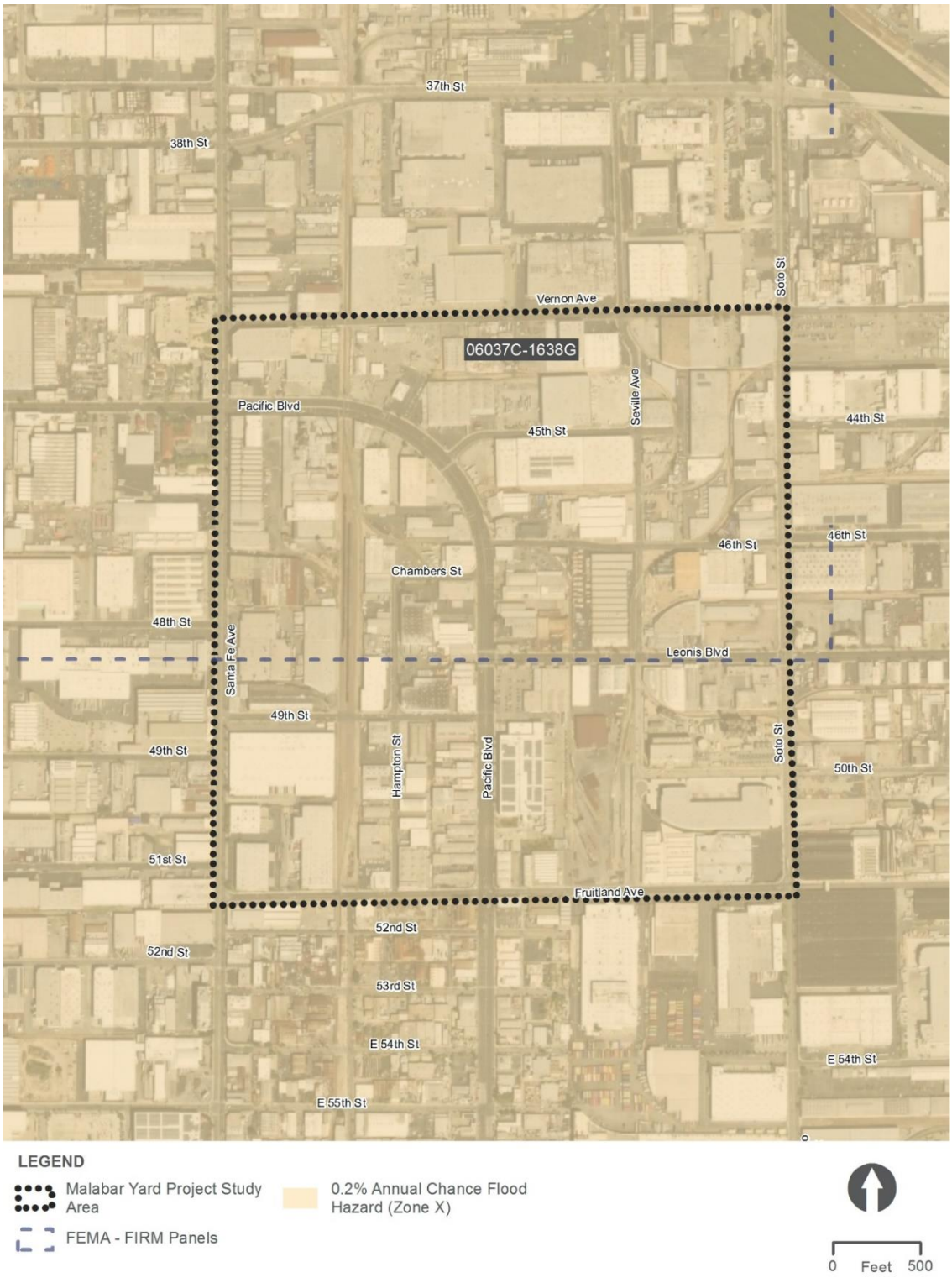

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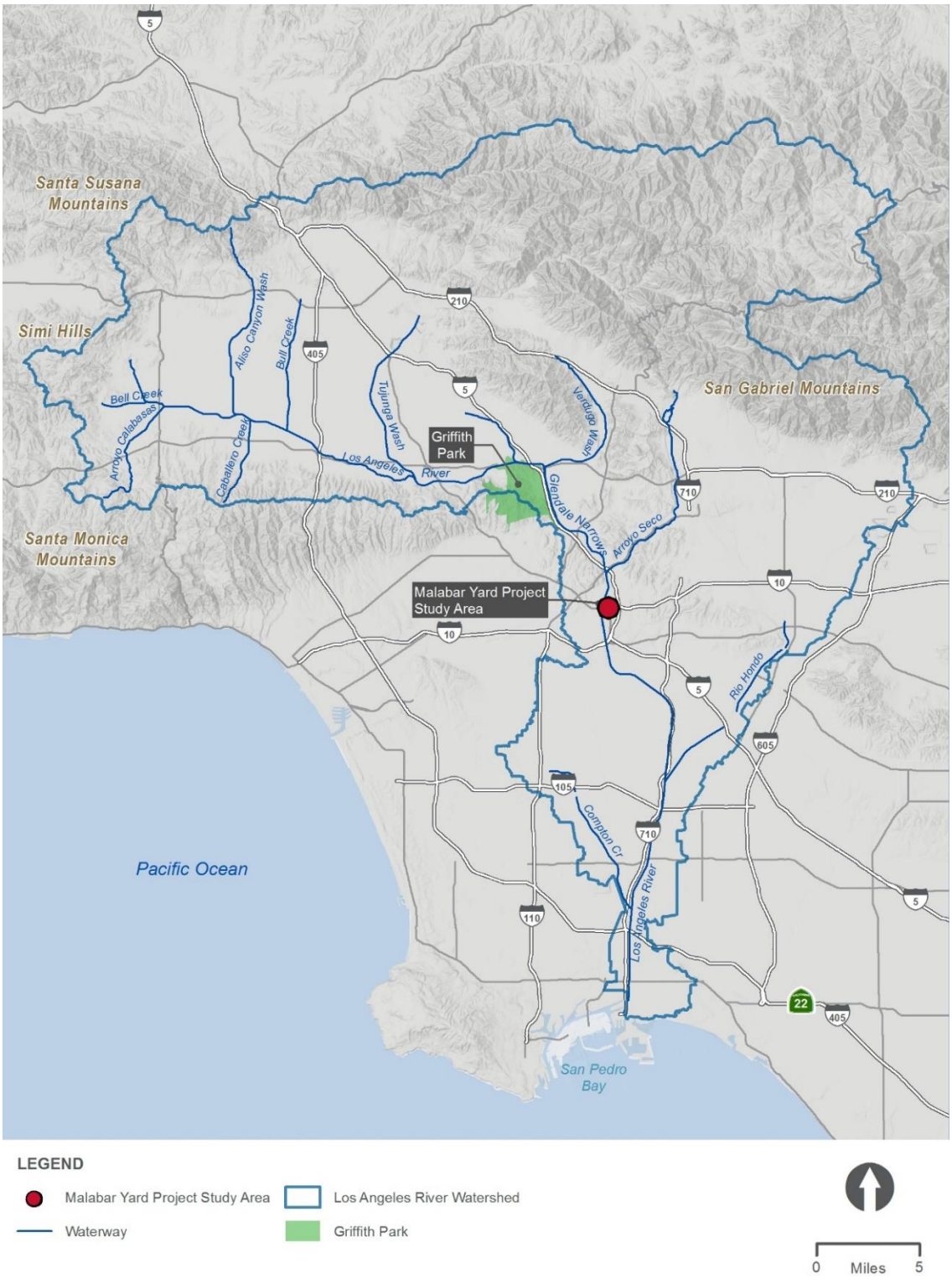
Figure 3.8-2. Regional Hydrology for Malabar Yard



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Precipitation and Climate

Local climate conditions in the Malabar Yard study area are characterized by warm summers, mild winters, infrequent rainfall, moderate humidity, and moderate breezes during the daytime. Periods of hot weather, winter storms, and Santa Ana winds occasionally disrupt the mild climate. Precipitation generally occurs as rainfall during major storms, with snowfall occurring at higher elevations. The average temperature in Vernon is 63.5 degrees Fahrenheit and annual rainfall for the City of Vernon is approximately 14.1 inches (Climate-data.org 2023).

Surface Waters

A network of underground storm drains collects runoff from hard surfaces, including roadways and buildings, and directs flows to the Los Angeles River, which is highly modified, with concrete lining the majority of its length, including the section that is closest to the Malabar Yard study area. Along the middle and lower sections of the river, it is unlined and supports natural habitat for fish and other wildlife species. However, the majority of the river carries urban runoff, tertiary-treated effluent from several municipal wastewater treatment plants, and illegally dumped materials. This activity contributes to the impaired water quality in the Los Angeles River and its tributaries.

Drainage and Flood Control Improvements

Figure S-4 of the *Vernon General Plan Safety Element* identifies the Malabar Yard study area as located within two dam inundation areas: Sepulveda Dam Inundation Area and Hansen Dam Inundation Area. Stormwater runoff in Vernon is conveyed through the Los Angeles County Flood Control District storm drainage systems (City of Vernon 2015). The City of Vernon and Los Angeles County Flood Control District maintain storm drain systems in the Malabar Yard study area. Based on a review of the Los Angeles County Public Works' Storm Drain System geodatabase[2] for the Malabar Yard railroad improvements at 46th Street, County system BI 8201 Line A and BI 8202 Line B are located along Pacific Boulevard and Seville Avenue, respectively, and are oriented in a north (upstream) to south (downstream) direction. Similarly, for the Malabar Yard railroad improvements at 49th Street, County system BI 8201 Line B and BI 8201 49th Street Lateral are located along Santa Fe Avenue and 49th Street, respectively.

Municipal Supply

Potable water resources in Vernon are limited to the groundwater basins that underlie the city (and surrounding lands) and recycled water. Local groundwater is contained within the Los Angeles River and Gaspar aquifers, which supply a significant portion of the water used by businesses in the city (City of Vernon 2015).

Groundwater Hydrology

The Coastal Plain of Los Angeles (Central) Groundwater Basin (Basin Number 4-11.04 of the South Coast Hydrologic Region) is the major groundwater basin located in the Malabar Yard study

[2] https://pw.lacounty.gov/fcd/StormDrain/index.cfm#map

area. Water levels varied from about 25 feet between 1961 and 1977 and about 5 to 10 feet since 1996. Most water wells show levels in 1999 that are in the upper portion of their recent historical range (California Department of Water Resources [DWR] 2004).

Based on a review of California's Groundwater Live,[3] the DWR's interactive dashboard, the nearest groundwater well to the Malabar Yard study area is located near the intersection of Alameda Street and Laura Avenue. The groundwater level measurement at this groundwater well was approximately 172.06 feet below ground surface on March 13, 2023. Furthermore, a review of boring logs for geotechnical activities performed in 2018 for areas in the vicinity of Malabar Yard railroad improvements indicate that groundwater was not encountered within the maximum explored depth of approximately 83 feet below ground surface at borings performed north of the Malabar Yard study area (CHSRA 2018).

Water Quality

Water Quality Objectives/Standards and Beneficial Uses

Surface Water Quality Objectives/Standards and Beneficial Uses

Beneficial uses of water are defined in the Basin Plan as those uses necessary for the survival or well-being of humans, plants, and wildlife (Los Angeles RWQCB 2014b). Examples of beneficial uses include drinking water supplies, swimming, industrial and agricultural water supply, and support of freshwater and marine habitats and their organisms.

As identified in Table 8-2 of the Basin Plan (Los Angeles RWQCB 2014b), the surface water beneficial uses for Reach 2 of the Los Angeles River are as follows:

- Municipal and Domestic Supply (MUN);
- Groundwater Recharge (GWR);
- Industrial Service Supply (IND);
- Water Contact Recreation (REC 1);
- Non Contact Water Recreation (REC 2);
- Warm Freshwater Habitat (WARM); and
- Wildlife Habitat (WILD).

Water quality objectives, as defined by California Water Code Section 13050(h), are the "limits or levels of water quality constituents or characteristics, which are established for the reasonable protection of beneficial uses or the prevention of nuisance within a specific area." The stipulated surface water quality objectives for inland surface waters, which include streams, rivers, lakes,

[3] https://storymaps.arcgis.com/stories/b3886b33b49c4fa8adf2ae8bdd8f16c3

and wetlands as identified in the Basin Plan, are listed in Table 3.8-2, along with the numeric and narrative water quality objectives for the Los Angeles River (Los Angeles RWQCB 2014b).

Table 3.8-2. Surface Water Quality Objectives

Constituent	Concentrations
Ammonia, un-ionized	Discharges for 4-day average concentration will not exceed 0.035 mg/L; 1-hour average concentration will not exceed 0.233 mg/L.
Bacteria, Coliform	In waters designated for non-water contact recreation (REC-2) and not designated for water contact recreation (REC-1), the fecal coliform concentration will not exceed a log mean of 2,000/100 ml (based on a minimum of not less than four samples for any 30-day period), nor will more than 10 percent of samples collected during any 30-day period exceed 4,000/100 ml.
Bioaccumulation	Toxic pollutants will not be present at levels that will bioaccumulate in aquatic life to levels that are harmful to aquatic life or human health.
Biochemical oxygen demand	Waters will be free of substances that result in increases in the biochemical oxygen demand that adversely affect beneficial uses.
Biostimulatory substances	Waters will not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.
Chloride	Chloride will not exceed 190 mg/L.
Chlorine (residual)	Chlorine residual in wastewater discharged to inland surface waters will not exceed 0.1 mg/L.
Color	Waters will be free of coloration that causes nuisance or adversely affects beneficial uses.
Exotic vegetation	Exotic vegetation will not be introduced around stream courses to the extent that such growth causes nuisance or adversely affects beneficial uses.
Floatables	Waste discharges will not contain floating materials, including solids, liquids, foam, or scum, that cause a nuisance or adversely affect beneficial uses.
Fluoride	Surface waters designated as MUN will not exceed 2 mg/L as a result of controllable water quality factors, depending on air temperature.
Methylene blue activated substances	Waters designated as MUN will not exceed 0.05 mg/L as a result of controllable water quality factors.
Nitrogen (Nitrate, Nitrite)	Waters will not exceed 10 mg/L nitrogen as nitrate-nitrogen plus nitrite-nitrogen, 45 mg/L as nitrate, 10 mg/L as nitrate-nitrogen, or 1 mg/L as nitrite-nitrogen.
Oil and grease	Waters will not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or objects in the water, or that cause nuisance or otherwise adversely affect beneficial uses.

Table 3.8-2. Surface Water Quality Objectives

Constituent	Concentrations
Oxygen (dissolved)	At a minimum (see specifics below), the mean annual dissolved oxygen concentration of all waters will be greater than 7 mg/L, and no single determination will be less than 5 mg/L, except when natural conditions cause lesser concentrations. The dissolved oxygen content of all surface waters designated as WARM will not be depressed below 5 mg/L as a result of waste discharges.
Pesticides	No individual pesticide or combination of pesticides will be present in concentrations that adversely affect beneficial uses. There will be no increase in pesticide concentrations found in bottom sediments or aquatic life.
pH	The pH of inland surface waters will not be depressed below 6.5 or raised above 8.5 as a result of waste discharges. Ambient pH levels will not be changed by more than 0.5 unit from natural conditions as a result of waste discharge.
Polychlorinated biphenyls	The purposeful discharge of polychlorinated biphenyls (the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260) to waters of the region, or at locations where the waste can subsequently reach waters of the region, is prohibited. Pass-through or uncontrollable discharges to waters of the region, or at locations where the waste can subsequently reach water of the region, are limited to 70 picograms/L (30-day average) for protection of human health and 14 nanograms/L and 30 nanograms/L (daily average) to protect aquatic life in inland fresh waters and estuarine waters, respectively.
Radioactivity	Radioactive materials will not be present in the waters of the region in concentrations that are deleterious to human, plant, or animal life. Waters designated MUN will meet the limits specified in CCR, Title 22.
Solids (suspended and settleable)	Waters will not contain suspended or settleable material in amounts that cause nuisance or adversely affect beneficial uses as a result of controllable water quality factors.
Sulfate	Sulfates will not exceed 350 mg/L.
Taste and odor	Waters will not contain taste or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible aquatic resources, cause nuisance, or adversely affect beneficial uses.
Temperature	The natural receiving water temperature of all regional waters will not be altered unless it can be demonstrated to the satisfaction of the regional board that such alteration in temperature does not adversely affect beneficial uses. For waters designated WARM, water temperature will not be altered by more than 5°F above the natural temperature. At no time will these WARM-designated waters be raised above 80°F as a result of waste discharges.
Total dissolved solids	Total dissolved solids will not exceed 1,500 mg/L.

Table 3.8-2. Surface Water Quality Objectives

Constituent	Concentrations
Toxic substances	Toxic substances will not be discharged at levels that will bioaccumulate in aquatic resources to levels that are harmful to human health. The concentrations of contaminants in waters that are existing or potential sources of drinking water will not occur at levels that are harmful to human health. Concentrations of toxic pollutants in the water column, sediments, or biota will not adversely affect beneficial uses.
Turbidity	Waters will be free of changes in turbidity that cause a nuisance or adversely affect beneficial uses. Increases in natural turbidity attributable to controllable water quality factors will not exceed the following limits: where natural turbidity is between 0 and 50 nephelometric turbidity units, increases will not exceed 20 percent. Where natural turbidity is greater than 50 nephelometric turbidity unit, increases will not exceed 10 percent.

Source: Los Angeles RWQCB 2014b
Notes:
°F=degrees Fahrenheit; CCR=California Code of Regulations; pH=potential of hydrogen; mg/L=milligrams per liter; ml=milliliter; MUN=municipal supply; GWR=groundwater recharge; IND= industrial supply; REC-1=water contact recreation; REC-2= non-contact water recreation; WARM=warm freshwater habitat; WILD=wildlife habitat

Groundwater Quality Objectives/Standards and Beneficial Uses

The following beneficial uses are identified in the Basin Plan for the Coastal Plain of Los Angeles (Central) Groundwater Basin (Basin Number 4-11.04 of the South Coast Hydrologic Region) (Los Angeles RWQCB 2014b):

- Municipal and Domestic Supply (MUN);
- Agricultural Supply (AGR);
- Industrial Service Supply (IND); and
- Industrial Process Supply (PROC).

The stipulated water quality objectives for groundwater, as identified in the Basin Plan for Subbasin 4-11.04, are listed in Table 3.8-3 (Los Angeles RWQCB 2014b).

Table 3.8-3. Groundwater Water Quality Objectives

Constituent	Concentrations
Boron	Boron will not exceed 1.0 mg/L.
Chloride	Chloride will not exceed 150 mg/L.
Sulfate	Sulfates will not exceed 250 mg/L.

Table 3.8-3. Groundwater Water Quality Objectives

Constituent	Concentrations
Total dissolved solids	Total dissolved solids will not exceed 700 mg/L.

Source: Los Angeles RWQCB 2014b
Notes:
mg/L=milligrams/liter

Existing Water Quality

Water Quality Monitoring

The most recent water quality data collection near the Malabar Yard study area occurred on June 29, 2005 (State Water Resources Control Board [SWRCB] 2022). Table 3.8-4 summarizes water quality measurements collected by the Surface Water Ambient Monitoring Program at Site No. 412LAR007 and 412CE0104 of the Los Angeles River (HUC-8 Code 18070105) for selected constituents, compared to water quality objectives provided in the Basin Plan (see description below).

Regional Water Quality

Pollutants from dense clusters of residential, industrial, and other urban activities in the Los Angeles Basin have impaired water quality in the immediate vicinity of the Malabar Yard study area. Added to this complex mixture of pollutant sources (in particular, pollutants associated with urban and stormwater runoff) is the high number (in the thousands) of point source industrial, construction, and municipal permits issued both north and south of the Malabar Yard study area (Los Angeles RWQCB 2014b).

Local Water Quality

The Surface Water Ambient Monitoring Program maintains water quality stations along the Los Angeles River. The most recent water quality data were collected on June 29, 2005 (SWRCB 2005). Table 3.8-4 summarizes water quality measurements collected by the surface water ambient monitoring program at Site Numbers 412LAR007 and 412CE0104 for the Los Angeles River hydrologic unit for selected constituents. Monitoring Site 412LAR007 is located just south of Atlantic Boulevard in the City of Vernon, Monitoring Site 412CE0104 is located between Spring Street and Main Street (about 0.8 mile south of Highway 110) in the City of Los Angeles.

Table 3.8-4. Los Angeles River Water Quality - 2005 Results

Analyte	Unit	Basin Plan Water Quality Objectives	Los Angeles Random Site 7 Station Code 412LAR007	Los Angeles River ~0.8 mile below Highway 110, Station Code 412CE0104
Specific conductivity, total	microsiemens/centimeter	—	1323	945
Oxygen, dissolved, total	mg/L	> 5	21.31	12.5
Temperature	Degrees Celsius	< 26.67	29.81	25.1
Velocity	feet/second	—	—	0
Salinity, total	parts per thousand	< 1	0.65	0.4
Turbidity	nephelometric turbidity unit	< 5	4.7	—
Oxygen, saturation, total	percentage	—	284.2	—
pH	units	> 6.5 < 8.5	9.7	—
Nitrite as N, dissolved	mg/L	< 1	1.42	—
OrthoPhosphate as P, dissolved	mg/L	—	0.343	—
Chloride, dissolved	mg/L	< 190	107	—
Hardness as calcium carbonate, total	mg/L	—	332	—
Ammonia as N, total	mg/L	<0.233	0.059	—
Nitrogen, total Kjeldahl, total	mg/L	< 8	2.86	—
Phosphorus as P, total	mg/L	—	0.597	—
Nitrate as N, dissolved	mg/L	< 10	2.6	—

Table 3.8-4. Los Angeles River Water Quality - 2005 Results

Analyte	Unit	Basin Plan Water Quality Objectives	Los Angeles Random Site 7 Station Code 412LAR007	Los Angeles River ~0.8 mile below Highway 110, Station Code 412CE0104
Chlorophyll a, particulate	µg/L	—	63.7	—
Sulfate, dissolved	mg/L	< 350	226	—

Source: California Environmental Data Exchange Network 2018 and Los Angeles RWQCB 2014b.
Notes:
µg/L=micrograms/liter; mg/L=milligrams per liter; pH=potential of hydrogen

Section 303(d) List of Impaired Waters

Within the Compton Creek hydrologic subarea, the Los Angeles River Reach 2 is the receiving waterbody listed as an impaired waterbody on the 2020–22 CWA Section 303(d) list (SWRCB 2022). A summary of the hydrologic information, 303(d) listed waterbodies and their associated Pollutants of Concern (POCs) is provided in Table 3.8-5.

Table 3.8-5. 2020–22 Clean Water Act Section 303(d) Listed Waterbodies and Pollutants of Concern

Jurisdiction	Hydrologic Unit	Hydrologic Area	Hydrologic Subarea #	Waterbody	Pollutant of Concern
Los Angeles RWQCB[a]	Los Angeles	Lower Los Angeles River	Compton Creek	Los Angeles River (Reach 2)	Ammonia,[b] Indicator Bacteria,[c] Copper,[d] Lead,[e] Nutrients (Algae),[f] Oil,[g] and Trash[h]

Source: SWRCB 2022
Notes:
[a] 2020–22 Section 303(d) Approved List.
[b] Pollutants of concern with a U.S. EPA-approved TMDL, U.S. EPA TMDL Approved Date, 2004-03-18.
[c] Pollutants of concern with a U.S. EPA-approved TMDL, U.S. EPA TMDL Approved Date, 2012-03-23.
[d] Pollutants of concern with a U.S. EPA-approved TMDL, U.S. EPA TMDL Approved Date, 2005-12-22.
[e] Pollutants of concern with a U.S. EPA-approved TMDL, U.S. EPA TMDL Approved Date, 2005-12-22.
[f] Pollutants of concern with a U.S. EPA-approved TMDL, U.S. EPA TMDL Approved Date, 2004-03-18.
[g] Pollutants of concern with a U.S. EPA-approved TMDL, Expected TMDL Completion Date, 2019.
[h] Pollutants of concern with a U.S. EPA-approved TMDL, U.S. EPA TMDL Approved Date, 2008-07-24.
RWQCB=Regional Water Quality Control Board; TMDL=total maximum daily load; U.S. EPA=United States Environmental Protection Agency

Groundwater Quality

The Coastal Plain of Los Angeles (Central) Groundwater Basin (Basin Number 4-11.04 of the South Coast Hydrologic Region) is the major groundwater basin located in the Malabar Yard study

area. According to DWR's Groundwater Bulletin 118, the water quality in public supply wells in the Central Groundwater Basin are contaminated with the following constituents: inorganics, radiological, nitrates, pesticides, volatile organic (VOC), and semi-VOCs (California DWR 2004).

3.8.4 Environmental Consequences

No Action Evaluation

The following topics were evaluated to determine potential effects if the Malabar Yard railroad improvements in the City of Vernon were not implemented in conjunction with the Build Alternative.

Drainage Patterns, Soil Erosion, and Siltation

If the proposed Malabar Yard railroad improvements were not implemented, no direct or indirect effects related to drainage patterns, soil erosion, and siltation would occur. Existing drainage patterns would remain the same as no grading and excavation would take place.

Stormwater

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects related to stormwater would occur. Construction would not occur and therefore, excavated soil would not be exposed and there would not be an increased potential for soil erosion or the transport of contaminated soil.

Flooding

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects related to flooding would occur.

Water Quality Standards and Waste Discharge Requirements

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects related to water quality standards and waste discharge requirements would occur. Construction activities that could adversely affect water quality and waste discharge requirements and exceed stormwater and non-stormwater discharge requirements would not occur.

Evaluation of Malabar Yard Railroad Improvements

TOPIC 3.8-A	Drainage patterns, soil erosion, and siltation

Direct Effects – Construction

During construction, any combination of design options for the Malabar Yard railroad improvements would require grading and excavation and it may be necessary for the contractor to reroute drainage around one or more construction areas to ensure that connections to existing drainage infrastructure are maintained and/or improved. The Los Angeles County Flood Control

District maintains storm drains in the Malabar Yard study area, which drain to the Los Angeles River. If not properly managed, any increases in sediment load from the construction area could lead to erosion and alterations in drainage patterns and/or flooding due to accumulations of sediment in downstream areas or on adjacent properties. Effects could be adverse if not properly managed. Implementation of Malabar Yard Mitigation Measure HWQ-1 (described in Section 3.8.5), which requires preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) by a Qualified SWPPP Developer, would minimize effects on drainage patterns. The two main objectives of the SWPPP are to help identify the sources of sediment and other pollutants that affect the quality of stormwater discharge and to describe and ensure the implementation of Best Management Practices (BMP) to reduce sediment and other pollutants in stormwater and non-stormwater discharge. Upon implementation of Malabar Yard Mitigation Measure HWQ-1, no direct adverse effect would occur.

Direct Effects – Operations

Impervious surface would not be added for any combination of design options at the locations. Along 46th Street and 49th Street the impervious surface would decrease due to installation of new ballast at both locations effectively replacing impervious areas with pervious ballasted trackbed.

A summary of the affected areas is discussed below:

- **46th Street:** For Design Option 1 at 46th Street, approximately 250,000 square feet of impervious surface would be reconstructed with new ballasted trackbed creating new pervious areas. For Design Option 2 at 46th Street, approximately 230,000 square feet of impervious surface would be reconstructed with new ballasted trackbed creating new pervious areas.
- **49th Street:** For Design Option 1 at 49th Street, approximately 80,000 square feet of impervious surface would be reconstructed as new ballasted trackbed. For Design Option 2 at 49th Street, approximately 85,000 square feet of impervious surface would be reconstructed as new ballasted trackbed. Both Design Options would convert existing impervious surfaces to pervious.

In areas where existing impervious surfaces would be replaced with pervious ballasted trackbed, there would be an anticipated reduction in the rate of stormwater runoff entering the public storm drain system. This is due to runoff from pervious surfaces being less than that from impervious surfaces. However, there is still a potential for an adverse effect on drainage if not properly designed for and managed throughout operation. For example, some storm drains may receive more runoff than under existing conditions by concentrating runoff to certain areas. Implementation of Malabar Yard Mitigation Measure HWQ-5 would minimize the potential effects on drainage capacity and infrastructure through compliance with the National Pollutant Discharge Elimination System (NPDES) Waste Discharge Requirements for Municipal Separate Storm Sewer Systems (MS4) Discharges within the Coastal Watersheds of Los Angeles County and through preparation of a low impact development (LID) report that complies with County of Los

Angeles *Low Impact Development Guidance Manual (2014)*. The primary goal of NPDES permits is to regulate stormwater and non-stormwater discharge through the use of LID, which is a stormwater management strategy designed to retain stormwater runoff on site by minimizing soil compaction and impervious surfaces. Upon implementation of Malabar Yard Mitigation Measure HWQ-5, no direct adverse effect would occur.

Indirect Effects – Construction and Operations

During construction and operations, implementation of any combination of design options for the Malabar Yard railroad improvements may result in potential soil erosion and may alter drainage patterns as it may be necessary for the contractor to reroute drainage around one or more construction areas to ensure that connections to existing drainage infrastructure are maintained and/or improved. Potential effects could be adverse if not properly managed. However, with implementation of Malabar Yard Mitigation Measure HWQ-1 (described in Section 3.8.5), which requires preparation and implementation of an SWPPP by a Qualified SWPPP Developer, effects on drainage patterns would be minimized during construction. Implementation of Malabar Yard Mitigation Measure HWQ-5 (described in Section 3.8.5) would minimize the potential effects on drainage capacity and infrastructure through compliance with applicable NPDES permit requirements to regulate stormwater and non-stormwater discharge and through preparation of a LID report that would allow for the minimization of soil compaction and impervious surfaces to retain stormwater runoff on-site during operations. In addition, drainage infrastructure to support the Malabar Yard railroad improvements throughout operations would be designed in accordance with standard engineering practices and all applicable building and drainage requirements would be implemented. Upon implementation of Malabar Yard Mitigation Measure HWQ-1 and HWQ-5, no indirect adverse effect would occur.

TOPIC 3.8-B	Stormwater

Direct Effects – Construction

POCs during construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. During construction of any combination of design options for the Malabar Yard railroad improvements, excavated soil would be exposed and there would be increased potential for soil erosion. In addition, as described in Section 3.10, Hazardous Waste and Materials, excavated soils would likely be contaminated and the contractor would be required to follow special protocols for disposal of the soils. Also, if not properly managed, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked and have the potential to be transported via stormwater runoff into the Los Angeles River Reach 2. This is considered an adverse effect. Implementation of Malabar Yard Mitigation Measure HWQ-1 (described in Section 3.8.5), which requires preparation and implementation of an SWPPP and Malabar Yard Mitigation Measure HAZ-1 (described in Section 3.10, Hazardous Waste and Materials), which requires preparation and implementation of a construction hazardous materials management plan (HMMP). The HMMP includes provisions for safe storage, containment, and disposal of chemicals and hazardous materials used or exposed

during construction, including the proper locations for disposal, thereby minimizing potential transport of soils and contaminants to stormwater drainage systems and associated adverse effects on water quality during construction of the Malabar Yard railroad improvements. Upon implementation of Malabar Yard Mitigation Measure HWQ-1 and Malabar Yard Mitigation Measure HAZ-1, no direct adverse effect would occur.

Direct Effects – Operations

There is a net reduction in impervious surface equivalent of 250,000 square feet at 49th Street and 80,000 square feet at 46th Street when the existing track is replaced with ballasted track. However, the Malabar Yard study area is largely covered with impervious surfaces and any reconstruction of impervious surfaces could affect stormwater runoff if not properly designed for and managed throughout operation. This is considered an adverse effect. For example, some storm drains may receive more runoff than under existing conditions by concentrating runoff to certain areas. Implementation of Malabar Yard Mitigation Measure HWQ-5 (described in Section 3.8.5) would minimize potential effects associated with an increase in stormwater runoff by requiring post-construction BMPs such as, but not limited to, LID green street features, underground storm filters, underground storage, including runoff in applicable industrial activities, and other similar BMPs. Upon implementation of Malabar Yard Mitigation Measure HWQ-5, no direct adverse effect would occur.

Indirect Effects – Construction and Operations

Construction of any combination of design options for the Malabar Yard railroad improvements may result in changes to existing drainage patterns within the Project footprint for the design options, which may result in exceedances of the capacity of existing storm drains and stormwater facilities serving the area. Implementation of Malabar Yard Mitigation Measure HWQ-1 (described in Section 3.8.5), which requires preparation and implementation of an SWPPP, and Malabar Yard Mitigation Measure HAZ-1 (described in Section 3.10, Hazardous Waste and Materials), which requires preparation and implementation of a construction HMMP that would outline provisions for safe storage, containment, and disposal of chemicals and hazardous materials used or exposed during construction to minimize the potential transport of contaminated soils to stormwater drainage systems and associated adverse effects on water quality. In addition, implementation of Malabar Yard Mitigation Measure HWQ-5 (described in Section 3.8.5) would minimize potential effects associated with an increase in stormwater runoff by requiring post-construction BMPs to address potential effects during operations. Therefore, upon implementation of Malabar Yard Mitigation Measures HAZ-1, HWQ-1, and HWQ-5, no indirect adverse effect would occur.

TOPIC 3.8-C	Flooding

Direct Effects – Construction

The Malabar Yard railroad improvements would not increase the exposure of people or structures to a significant risk of loss, injury, or death related to flooding or inundation during construction

beyond existing conditions because the Malabar Yard railroad improvements are located in Zone X (area with minimal flood hazard). No direct adverse effect would occur.

Direct Effects – Operations

The Malabar Yard study area is located within two dam inundation areas. Any combination of design options for the Malabar Yard railroad improvements would maintain and improve the existing drainage pattern, which would not affect the existing inundation areas. Furthermore, the Malabar Yard railroad improvements would be designed and constructed in accordance with standard engineering practices to ensure they would not expose people or structures to a significant risk of loss, injury, or death related to flooding or inundation beyond existing conditions. No direct adverse effect would occur.

Indirect Effects – Construction and Operations

The Malabar Yard railroad improvements would be constructed in accordance with standard engineering practices to ensure they would not expose people or structures to a new significant risk of loss, injury, or death related to flooding or inundation beyond existing conditions. No indirect adverse effect would occur.

TOPIC 3.8-D	Water quality standards and waste discharge requirements

Direct Effects – Construction

Construction of any combination of design options for the Malabar Yard railroad improvements could result in a temporary adverse effect on water quality and waste discharge requirements and exceed stormwater and non-stormwater discharge requirements if runoff is not properly managed. Grading activities would involve the operation of heavy equipment and cutting of shallow excavations. Although the Malabar Yard study area is relatively flat and the potential for soil erosion is considered to be low, stormwater runoff could result in short-term erosion within areas of exposed or stockpiled soils. If uncontrolled, soil materials could block storm drainage channels and cause downstream sedimentation.

Removal of existing track and ballast, including creosote ties, rails, wire, and metal materials, may also expose excavated dirt contaminated with lead, copper, chromium, and other contaminants typical of a railroad yard. Surface runoff exposure to soils containing these contaminants could reduce water quality of the Los Angeles River Reach 2. Similarly, tainted soil may be subject to erosion from storm events. Improper handling of concrete mix could be carried away by runoff and also result in degradation of surface water. This is considered an adverse effect.

Implementation of Malabar Yard Mitigation Measures HWQ-1, HWQ-2, and HWQ-3 (described in Section 3.8.5) under any combination of design options would minimize potential transport of soils and contaminants to stormwater drainage systems and associated adverse effects on water quality during construction of the Malabar Yard railroad improvements by requiring preparation and implementation of an SWPPP and compliance with dewatering requirements. Upon

implementation of Malabar Yard Mitigation Measures HWQ-1, HWQ-2, and HWQ-3, no direct adverse effect would occur.

Direct Effects – Operations

During operation of any combination of design options for the Malabar Yard railroad improvements, minor amounts of metals from brake dust, oil and grease would originate from train cars, which could discharge oil, grease, and other chemical pollutants into existing drainage systems. This is considered an adverse effect. Implementation of Malabar Yard Mitigation Measure HWQ-5 (described in Section 3.8.5) would minimize potential degradation of water quality during operation of the Malabar Yard railroad improvements by requiring post-construction BMPs to treat the runoff prior to discharge to the local storm drain system. Upon implementation of Malabar Yard Mitigation Measure HWQ-5, no direct adverse effect would occur.

Indirect Effects – Construction and Operations

Post-construction runoff for any combination of design options would not increase the quantity of water delivered to the Los Angeles River Reach 2 during storms. Impervious surfaces can interrupt the natural cycle of gradual percolation of water through vegetation and soil, with water being collected from surfaces such as asphalt, concrete, and other compacted surfaces and routed to drainage systems where large volumes of runoff are discharged to the Los Angeles River Reach 2. This process is referred to as hydromodification and can contribute to streambank scouring and downstream flooding, which can result in loss of aquatic life and damage to property. However, given that the site is urbanized today, the Malabar Yard railroad improvements would not increase the impervious surface and thereby cause hydromodification. There would be a slight decrease in hydromodification along the section of new tracks because drainage runoff would not lead to an inlet. Sheet flow would instead use ballasted track to percolate and reduce drainage toward the river. Drainage runoff from operation of the Malabar Yard railroad improvements would enter one of numerous drainage systems. For these reasons, the Malabar Yard railroad improvements would not result in discharges that could indirectly adversely affect downstream surface waters by increasing scour and/or sedimentation.

For the Malabar Yard railroad improvements at 49th Street and at 46th Street (Design Option 2), no effects on industrial operations would occur. However, for Design Option 1 at 46th Street, potential impacts could occur on two sites that currently have an active Waste Discharger Identification number under the Industrial General Permit (IGP), which includes the Flores Design (APN 6308-004-012, south side of 46th Street, between Pacific Boulevard and Seville Avenue) and Arcadia Leonis (APN 6308-004-012, southwest corner of 46th Street and Seville Avenue). These sites include active permits with provisions to treat stormwater discharges that include pollutants, and updates to the permit may be required to continue to operate under the same permit. If these processes are not continued, industrial stormwater may not be treated and could negatively affect the storm drain system. This is considered an adverse effect. Implementation of Malabar Yard Mitigation Measure HWQ-4 (described in Section 3.8.5) would minimize potential effects resulting from the discharge of pollutants to stormwater facilities during operation by requiring an industrial SWPPP for relocated, regulated industrial uses by complying with NPDES

permits. Upon implementation of Malabar Yard Mitigation Measure HWQ-4, no indirect adverse effect would occur.

3.8.5 Mitigation Measures

Implementation of the following mitigation measures would avoid or minimize potential adverse effects on floodplains, hydrology, and water quality. Mitigation measures for the Malabar Yard railroad improvements include "MY" in the nomenclature as shown below.

MY HWQ-1 **Prepare and Implement a SWPPP for the Malabar Yard Railroad Improvements:** During construction, Metro or BNSF shall comply with the provisions of the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002) and any subsequent amendments (Order No. 2010-0014-DWQ, and Order No. 2012-0006-DWQ), which are currently in effect. However, during construction of the Malabar Yard railroad improvements, Order Number 2022-0057-DWQ may be in effect. This permit was adopted on September 8, 2022, and will become effective on September 1, 2023. Construction activities shall not commence until a waste discharger identification number is received from the Stormwater Multiple Application and Report Tracking System. The contractor shall implement all required aspects of the SWPPP during Project construction. Metro or BNSF shall comply with the Risk Level 2 sampling and reporting requirements of the construction general permit (CGP). A rain event action plan shall be prepared and implemented by a qualified SWPPP developer within 48 hours prior to a rain event of 50 percent or greater probability of precipitation according to the National Oceanic and Atmospheric Administration. A Notice of Termination shall be submitted to the SWRCB within 90 days of completion of construction and stabilization of the site.

MY HWQ-2 **Comply with Local Dewatering Requirements for the Malabar Yard Railroad Improvements:** The contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0095, NPDES Permit No. CAG994004), effective July 6, 2013 (known as the Dewatering Permit), as they relate to discharge of non-stormwater dewatering wastes. The two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall obtain a permit from the RWQCB and/or the City of Vernon.

MY HWQ-3 **Comply with Local Dewatering Requirements for Contaminated Sites for the Malabar Yard Railroad Improvements:** The contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Treated Groundwater from Investigation and/or Cleanup of VOC Contaminated Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura

Counties (Order No. R4-2013-0043, NPDES Permit No. CAG914001), effective April 7, 2013 (known as the Dewatering Permit for contaminated sites), for discharge of non-stormwater dewatering wastes from contaminated sites impacted during construction. The two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall require a permit from the RWQCB and/or the City of Vernon.

MY HWQ-4 **Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses for the Malabar Yard Railroad Improvements:** Metro or BNSF shall comply with the NPDES General Permit for Stormwater Discharges Associated with Industrial Activities (IGP; Order No. 2014-0057-DWQ, as amended by Order No. 2015-0122-DWQ, NPDES No. CAS000001) for demolished, relocated, or new industrial-related properties impacted by the railroad improvements. This shall include preparation of industrial SWPPP(s), as applicable.

MY HWQ-5 **Final Water Quality BMP Selection (City of Vernon and Railroad ROW) for the Malabar Yard Railroad Improvements:** For the Malabar Yard railroad improvements in the City of Vernon, Metro or BNSF shall comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2021-0105, NPDES No. CAS004004), effective September 11, 2021 (known as the Phase I Permit). Metro or BNSF shall also prepare a final LID report in accordance with the City of Vernon's *Low Impact Development Guidance Manual*. This document shall identify the required BMPs to be in place prior to Project operation and maintenance.

MY HAZ-1 **Prepare a Construction Hazardous Materials Management Plan (HMMP).** See Section 3.10, Hazardous Waste and Materials for details.

3.9 Geology, Soils, and Seismicity

This section provides an evaluation of potential effects related to existing geology, soils, and seismic conditions that may result upon implementation of the Malabar Yard railroad improvements.

3.9.1 Regulatory Framework

Table 3.9-1 identifies and summarizes applicable laws, regulations, and plans relevant to geology, soils, and seismicity.

Table 3.9-1. Applicable Laws, Regulations, and Plans for Geology, Soils, and Seismicity

Law, Regulation, or Plan	Description
Federal	
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(18)*, 64 *Federal Register* 28545-28556 (1999)[1]	The FRA's Procedures require the draft and final EIS to include an assessment to consider in the analysis public safety and the level of protection afforded residents of the affected environment from construction period and long-term operations.
Clean Water Act (33 United States Code §1341) (1972)	The CWA of 1972 is the primary federal law that governs and authorizes U.S. EPA and the states to implement activities to control water quality. The following are important CWA sections: • Section 102 states that parties involved prepare or develop comprehensive programs for preventing, reducing, or eliminating the pollution of the navigable waters and ground waters and improving the sanitary condition of surface and underground waters. • Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines. • Section 402 establishes the NPDES, a permitting system to control point source discharges from industrial, municipal, and other facilities if their discharges go directly to surface waters (except for dredge or fill material). RWQCB administers this permitting program in California. Section 402(p) requires permits for discharges of stormwater from industrial/construction and MS4s.
American Railway Engineering and Maintenance-of-Way Association's *Manual for Railway Engineering (2018)*	Although these guidelines cover many of the same general topics as the AASHTO, they are more focused on best practices for rail systems. The manual includes principles, data, specifications, plans, and economics pertaining to the engineering, design, and construction of railways.

[1] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

Table 3.9-1. Applicable Laws, Regulations, and Plans for Geology, Soils, and Seismicity

Law, Regulation, or Plan	Description
American Society for Testing and Materials International	ASTM International has developed standards and guidelines for all types of material testing, from soil classifications to pile load testing or compaction testing through to concrete strength testing. The ASTM standards also include minimum performance requirements for materials. Most of the guidelines and standards use ASTM or a corresponding series of standards from AASHTO to ensure that required/intended quality is achieved in the constructed project.
State	
Alquist-Priolo Special Studies Zone Act (California Public Resources Code Sections 2621-2630) (1972)	The Alquist-Priolo Special Studies Zone Act (Alquist-Priolo Act) (California PRC Sections 2621–2630) was passed into law following the destructive February 9, 1971, San Fernando Earthquake. The intent of the Alquist-Priolo Act is to ensure public safety by prohibiting the siting of most structures for human occupancy across traces of active faults that constitute a potential hazard to structures from surface faulting or fault creep.
Seismic Hazards Mapping Act (1990)	The Seismic Hazards Mapping Act aims to reduce the threat of seismic hazard to public health and safety by identifying and mitigating seismic hazards. State, county, and city agencies are directed to utilize such maps in land use and permitting processes. The act also requires geotechnical investigations particular to the site be conducted before permitting occurs on sites within seismic hazard zones.
California Building Code (2022)	The State of California provides minimum standards for building design through the CBC (CCR, Title 24). The 2022 California codes became effective January 1, 2023. With the shift from seismic zones to seismic design, the CBC philosophy has shifted from “life safety design” to “collapse prevention,” meaning that structures are designed for prevention of collapse for the maximum level of ground shaking that could reasonably be expected to occur at a site.
National Pollutant Discharge Elimination System Insurance General Permit (2014)	The Statewide General Permit for Stormwater Discharges Associated with Industrial Activities, Order 2014-0057-DWQ (IGP), as amended by Order No. 2015-0122-DWQ implements the federally required stormwater regulations in California for stormwater associated with industrial activities discharging to waters of the U.S. The IGP regulates discharges associated with 10 federally defined categories of industrial activities. The IGP requires the implementation of BMPs, a site-specific SWPPP, and monitoring plan. The IGP also includes criteria for demonstrating no exposure of industrial activities or materials to stormwater and no discharges to waters of the U.S.
National Pollutant Discharge Elimination System Construction General Permit (2022)	The CGP (Order No. 2009-0009-DWQ), adopted September 2, 2009, became effective July 1, 2010. This permit has since been amended twice by Orders No. 2010-0014-DWQ and 2012-0006-DWQ, which are currently in effect. However, during construction of the Project, Order Number 2022-0057-DWQ may be in effect. This permit was adopted on September 8, 2022, and will become effective on September 1, 2023. The permit regulates stormwater discharges from construction sites that result in a disturbed soil area of 1 acre or greater and/or are smaller sites that are

Table 3.9-1. Applicable Laws, Regulations, and Plans for Geology, Soils, and Seismicity

Law, Regulation, or Plan	Description
	part of a larger common plan of development. By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least 1 acre must comply with the provisions of the CGP. Construction activity that results in soil disturbances of less than 1 acre is subject to this CGP if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop SWPPP; implement sediment, erosion, and pollution prevention control measures; and obtain coverage under the CGP.
Local	
City Building Code for City of Vernon	Compliance of building and grading construction to 2013 City Building Code standards is covered under Engineering and Public Works departments.
City of Vernon General Plan	The Safety Element identifies the natural and man-made hazards which affect public safety in the City and establishes policies the City will pursue to minimize associated risks to life and property. Because these hazards can have significant economic consequences, identifying, understanding, and guarding against these hazards greatly benefits those who own property, work, and live in Vernon.

Notes:
AASHTO=American Association of State Highway and Transportation Officials; AREMA=American Railway Engineering and Maintenance-of-Way Association; ASTM=American Society for Testing and Materials; BMP=Best Management Practice; CBC=California Building Code; CCR=California Code of Regulations; CGP=Construction General Permit; CWA=Clean Water Act; DWQ=Division of Water Quality; EIS=Environmental Impact Statement; FRA=Federal Railroad Administration; IGP=Industrial General Permit; MS4=Municipal Separate Storm Sewer System; NPDES=National Pollutant Discharge Elimination System; PRC=Public Resources Code; RWQCB=Regional Water Quality Control Board; SWPPP=Storm Water Pollution Prevention Plan; UBC=Uniform Building Code; U.S. EPA=United States Environmental Protection Agency

3.9.2 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the Malabar Yard railroad improvements would affect:

- Seismic ground shaking or seismic-related ground failure, including liquefaction;
- Soil erosion;
- Collapse due to the use of corrosive unstable geologic units or soils; and/or
- Expansive soils.

Geographic Area Considered

The Malabar Yard study area, plus a 0.5-mile buffer, is used to characterize the affected environment and the Project footprint for the design options considered for the Malabar Yard railroad improvements is the geographic area considered to determine potential effects related to geology, soils, and seismicity.

Methodology

Relevant literature and maps were reviewed, including published geologic maps, the recent General Plan for the City of Vernon Safety Element (2009, amended 2015), geologic hazard-related regulations and maps, and previous geotechnical and environmental documents prepared for nearby projects, to identify existing geological soil conditions that may be affected by the Malabar Yard railroad improvements. A list of these documents is provided in Chapter 9, References. Based on results of the literature review, site conditions and geologic and geotechnical conditions within the Project footprint for design options considered for the Malabar Yard railroad improvements were assessed for potential adverse conditions that may pose safety risks during construction or operation. Based on the site conditions, appropriate mitigation measures are identified that would provide for safe and cost-effective construction practices, as well as structurally sound facilities.

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects for each of the topics considered is presented below.

Project-related effects would be considered adverse if the Malabar Yard railroad improvements exacerbate existing hazards related to seismic ground shaking, seismic ground failure, soil erosion, corrosive soils, and/or expansive soils, resulting in a substantial risk or loss of life, injury, or death and damage to property that cannot be mitigated.

Based on the site conditions, appropriate mitigation measures are identified that would provide for safe and cost-effective construction practices, as well as structurally sound facilities throughout operation.

3.9.3 Affected Environment

Regional Geology

The Malabar Yard study area is located within the Los Angeles Basin near the boundary of the Transverse Ranges Province and the northern Peninsular Ranges Geomorphic Province, southwest of the Los Angeles River on a gently sloping alluvial surface. Topography within the Malabar Yard study area slopes downward, from northwest to southeast, with ground elevations ranging from approximately 207 to 180 feet above mean sea level.

The Transverse Ranges are characterized by an east-west trending complex group of mountain ranges and valleys. The Transverse Ranges consist predominantly of sedimentary rocks,

Mesozoic granitic rocks, and ancient Precambrian rocks of all types. The northern Peninsular Ranges are characterized by a series of northwest-southwest trending mountains and faults. These mountain ranges are composed of metamorphosed sedimentary and volcanic rocks of Jurassic age that have been intruded by mid-Cretaceous plutonic rocks of the Southern California batholith and rimmed by Cenozoic sedimentary rocks (Schoellhamer et al. 1981).

Local Geologic Conditions

The Malabar Yard study area is underlain by Quaternary younger alluvium (Qa, Qal). Qa, Qal consists of surficial deposits that are Holocene in age (11,000 years old or less) and may overlie older units (Dibblee and Ehrenspeck 1989). Unmapped and undocumented artificial fill materials are anticipated to underlie portions of the Malabar Yard study area. The artificial fill likely varies in composition but can generally be expected to contain construction debris as well as imported natural earth materials. The compaction of this layer is typically uncertain and, therefore, this layer of fill can be categorized as “uncertified fill.”

Faulting

Based on a review of the California Earthquake Hazards Zone Application (EQ Zapp) available online by California Geological Survey (2023) and the USGS Quaternary Fault ArcGIS Online Database (USGS 2023a), the Malabar Yard study area is not underlain by known active or potentially active faults, nor does it lie within an Alquist-Priolo Earthquake Fault Zone.

The principal seismic hazard that could affect the Malabar Yard study area is ground shaking resulting from an earthquake occurring along one of several major active or potentially active faults in the vicinity of the Malabar Yard study area. A regional fault map is presented as Figure 3.9-1. Table 3.9-2 provides relevant fault parameters for the major faults (sorted based on distance) located near the Malabar Yard study area. The data were developed by USGS Online Hazard tool (USGS 2023b) and USGS Quaternary Fault ArcGIS Online Database (USGS 2023a.).

Seismicity

A number of major historical earthquakes have occurred in the vicinity of the Malabar Yard study area. Based on the review of the USGS earthquake catalog, nine earthquake events with magnitudes equal to or greater than 5.5 have occurred within a radius of 80 kilometers of the Malabar Yard study area between 1923 and 2023 (USGS 2023b). Table 3.9-3 summarizes the location of each earthquake, year of occurrence, earthquake magnitude, and depth of epicenter.

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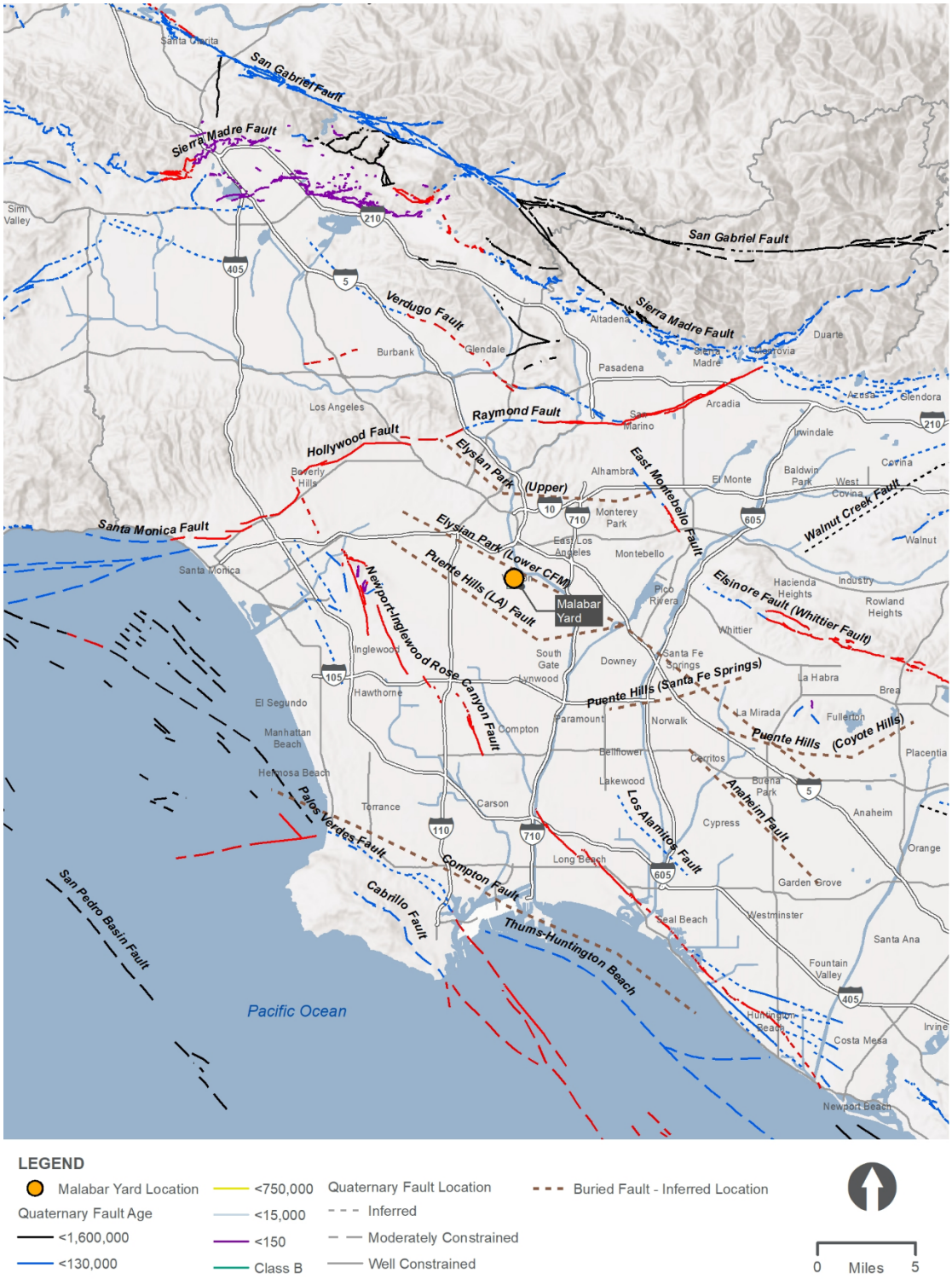
Figure 3.9-1. Malabar Yard Location in Context of Regional Active Faults



Source: USGS 2020a

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Table 3.9-2. Major Faults

Fault Name [a]	Distance from Malabar Yard study area (miles)	Potential Magnitude (Mw)
Puente Hills Blind Thrust (LA)	1.6	6.9
Elysian Park (Upper)	4.4	6.6
Newport Inglewood Fault Zone (North Los Angeles Basin section)	6.9	7.2
Puente Hills Blind Thrust (Santa Fe Springs)	8.0	6.6
Newport Inglewood Fault Zone (South Los Angeles Basin section-southern)	11.6	7.2
Campton Blind Thrust	14.9	7.0—–7.4

Source: USGS 2023a and 2023b
Notes:
[a] Faults included are based on the fault hazard contributions provided by USGS Deaggregation Tool (USGS 2023b) and include faults with a hazard contribution greater than 1 percent of the total seismic hazard.
Mw=moment magnitude; USGS=United States Geological Survey

Table 3.9-3. Historic Nearby Major Earthquakes

Earthquake Location	Date of Earthquake	Potential Magnitude (Mw)	Depth (miles)
Simi Valley, California	1994	5.6	5.7
Granada Hills, California	1994	5.9	3.3
Northridge, California	1994	6.7	11.3
Sierra Madre, California	1991	5.8	5.0
Claremont, California	1990	5.5	2.1
Rosemead, California	1987	5.9	5.5
Agua Dulce, California	1971	5.8	3.7
Agua Dulce, California	1971	6.6	5.5
Long Beach, California	1933	6.4	3.7

Source: USGS 2020b
Notes:
Mw=moment magnitude

Geologic and Geotechnical Hazards

Potential geologic hazards within the region include surface fault rupture, seismic ground shaking, liquefaction and seismically induced settlement, lateral spreading, landslides, subsidence, seiches, tsunamis, collapsible soils, expansive soils, and corrosive soils. These potential geologic hazards, as expressed locally within the context of Malabar Yard railroad improvements, are described below.

Surface Fault Rupture

The Malabar Yard study area is not traversed by known active or potentially active faults. Therefore, the potential for surface fault rupture within the Malabar Yard study area is considered low. Based on the information available on EQ Zapp (CGS 2023), the nearest special study zone is the Newport Inglewood Fault Zone (North Los Angeles Basin section), which is approximately 96.9 miles southwest of the Malabar Yard study area.

Seismic Ground Shaking

The Malabar Yard study area is within an active seismic region and ground shaking from an earthquake occurring along several major active or potentially active faults in Southern California can be expected throughout the life of the Malabar Yard railroad improvements. As such, the probability that the Malabar Yard study area would be subject to strong seismic shaking at some point in the future is considered moderate to high, due to the proximity of known active faults in the region.

Liquefaction and Seismically Induced Settlement

Liquefaction is the loss of soil strength or stiffness due to a buildup of pore-water pressure during ground shaking. Liquefaction is associated primarily with loose (low-density), saturated, fine- to medium-grained, cohesionless soils. Effects of liquefaction can include sand boils, excessive displacements, bearing capacity failures, and lateral spreading. Seismically induced settlement consists of dry dynamic settlement (above groundwater or saturated zone) and liquefaction-induced settlement (below groundwater or saturated zone). This settlement occurs primarily within loose to moderately dense sandy soil due to reduction in volume during, and shortly after, an earthquake event.

The Malabar Yard study area is located within an area mapped as liquefaction zone by CGS (CGS 2023) and contains alluvial soil deposits that are typically associated with liquefaction. Based on the review of the Seismic Hazard Zone Reports for the *Los Angeles* and *South Gate, California* 7.5-Minute Quadrangles (CGS 1998a and 1998b), the historical high groundwater depth within the Malabar Yard study area ranges from about 40 to 50 feet below ground surface (bgs). Additionally, the Los Angeles River is located approximately 0.5-mile northeast of the Malabar Yard study area and there is potential for the presence of saturated zones or perched groundwater. Thus, potential for liquefaction and seismically induced settlement exists in the Malabar Yard study area.

Lateral Spreading

Lateral spreading is a type of landslide motion generally characterized by progressive cracking and ground motion near a slope face. Lateral spreading is generally associated with liquefiable soils, which allow the slope face and surrounding area to flow during or shortly after earthquake ground motions. Conditions favorable for lateral spreading are frequently found along streams and waterfronts or in loosely placed, saturated, sandy fill (Rauch 1997).

Based on the topography of the Malabar Yard study area (relatively flat terrain with minor slopes), the potential for lateral spreading is low.

Landslides

The Malabar Yard study area is located on relatively flat terrain with minor slopes and is not adjacent to hills or steep slopes. Therefore, the probability of a landslide occurring in the Malabar Yard study area is negligible.

Subsidence

Ground subsidence is a process characterized by downward displacement of surficial materials caused by natural phenomena such as removal of underground fluids, natural consolidation, dissolution of underground minerals, or by man-made phenomena such as underground mining, tunneling, or placing large fills over compressible earth materials. The Malabar Yard study area is not located in an area of known ground subsidence or within any delineated zones of subsidence due to groundwater pumping or oil extraction (USGS 2020c). Therefore, the potential for subsidence in the Malabar Yard study area is low.

Seiches and Tsunamis

Seiches are large waves generated in enclosed bodies of water in response to ground shaking. Tsunamis are waves generated in large bodies of water by fault vertical displacement or major ground movement. Considering the relatively flat topography of the Malabar Yard study area, inland location, and absence of enclosed bodies of water near the Malabar Yard study area, the potential for seiche and tsunami risks are considered negligible.

Earthquake-Induced Flooding

Earthquake-induced flooding is caused by dam failures or other water-retaining structure failures as a result of seismic shaking. The *Vernon General Plan Safety Element* identifies the Malabar Yard study area as located within two dam inundation areas: Sepulveda Dam Inundation Area and Hansen Dam Inundation Area. Stormwater runoff in Vernon is conveyed through the Los Angeles County Flood Control District storm drainage systems (City of Vernon 2015). The City of Vernon and Los Angeles County Flood Control District maintain storm drain systems in the Malabar Yard study area. Therefore, the risk related to earthquake-induced flooding in the Malabar Yard study area is moderate.

Collapsible Soils

A collapsible soil is generally defined as soil that will undergo a sudden decrease in volume and its internal support is lost under applied loads when water is introduced into the soil. Within the City of Vernon, the potential for hydrocollapse varies from low to moderate. The undocumented fill soils and alluvium underlying portions of the Malabar Yard study area are considered potentially collapsible. The potential for hydrocollapse is unknown for the specific area of Malabar Yard railroad improvements.

Expansive Soils

Expansive soils are generally plastic clays that can undergo a substantial increase in volume with an increase in moisture content and a substantial decrease in volume with a decrease in moisture content. Expansive soils can cause uplift pressures that can lead to structural damage. Within the City of Vernon, the expansion potential varies from low to high, as estimated by using correlation between expansion potential and Atterberg limit data from the Natural Resources Conservation Service (2021). For the specific area of Malabar Yard railroad improvements, the expansion potential is unknown. A site-specific geotechnical investigation should be performed to evaluate the potential for expansive soils at the site.

Corrosive Soils

The soils of Malabar Yard railroad improvements are anticipated to have low to high corrosion potential with respect to uncoated steel and low corrosion potential with respect to concrete, as estimated from Natural Resources Conservation Service data considering all soil units within the Malabar Yard study area (Natural Resources Conservation Service 2021). A site-specific corrosion study should be performed to evaluate the potential for corrosive potentials at the site.

3.9.4 Environmental Consequences

No Action Evaluation

The following topics were evaluated to determine potential effects if the Malabar Yard railroad improvements in the City of Vernon were not implemented in conjunction with the Build Alternative.

Seismic Ground Shaking or Seismic-related Ground Failure, including Liquefaction

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects related to seismic ground shaking or seismic-related ground failure, including liquefaction would occur.

Soil Erosion

If the Malabar Yard railroad improvements were not implemented, no construction activities would occur that would require excavation and grading that could result in removal of paved surfaces and minimal vegetation. Therefore, no direct or indirect effects related to soil erosion would\ occur.

Collapse Due to the Use of Corrosive Unstable Geologic Units or Soils

If the Malabar Yard railroad improvements were not implemented, no construction activities would occur on potentially collapsible soils that may be present within the Malabar Yard study area. Therefore, no direct or indirect effects related to corrosive or unstable soils would occur.

Expansive Soils

If the Malabar Yard railroad improvements were not implemented, no construction activities would occur within areas that contain potentially expansive soils. Therefore, no direct or indirect effects related to expansive soils would occur.

Evaluation of Malabar Yard Railroad Improvements

TOPIC 3.9-A	Seismic ground shaking or seismic-related ground failure, including liquefaction

Direct Effects – Construction

During construction of the Malabar Yard railroad improvements, the Malabar Yard study area would be subject to the same level of ground motion in the event of an earthquake as under existing conditions; however, standard safety protocols, in accordance with Occupational Safety and Health Administration (OSHA) requirements (e.g., Construction Safety Orders, Articles 1 through 37), would be implemented during construction to prevent risk of loss, injury, or death if seismic activity occurs during construction. Therefore, construction of the Malabar Yard railroad improvements would not exacerbate existing hazards related to seismic ground shaking or seismic-related ground failure, including liquefaction, when compared to existing conditions. No direct adverse effect would occur.

Direct Effects – Operations

Once operational, the probability that infrastructure associated with the Malabar Yard railroad improvements would be subject to strong seismic shaking is considered high due to the proximity of known active faults in the region and the seismic nature of Southern California. However, no habitable structures are proposed, and infrastructure would be designed in accordance with appropriate industry standards, including established engineering and construction practices as summarized in Table 3.9-1 (e.g., AREMA's *2018 Manual for Railway Engineering* and American Society for Testing and Materials [ASTM] International standards and guidelines). New infrastructure would be constructed to be seismically sound and expected to have an improved structural response to an earthquake when compared with existing conditions because new infrastructure would be designed per current railway structure requirements for seismic safety (AREMA 2018). As such, implementation of the Malabar Yard railroad improvements would not exacerbate existing hazards posed by seismic ground shaking or seismic-related ground failure. No direct adverse effect would occur.

Indirect Effects – Construction and Operations

Construction activities associated with Malabar Yard railroad improvements would not cause a regional increase in groundwater elevations or accelerate the potential for liquefaction or other types of seismically induced ground failure beyond existing conditions. However, given that the Malabar Yard study area includes soils that are potentially liquefiable, construction activities could lead to indirect effects associated with liquefaction, including displacements, and bearing capacity failures. Based on these considerations, this is considered an adverse effect. Malabar Yard Mitigation Measure GEO-1 (described in Section 3.9.5) requires a final geotechnical report to be prepared by a licensed geotechnical engineer during the final design phase. The final geotechnical report will provide recommendations as to the appropriate foundation designs that are consistent with the latest version of the California Building Code (CBC), as applicable at the time building and grading permits are pursued. Implementation of Malabar Yard Mitigation Measure GEO-1 would minimize potential liquefaction-related hazards associated with implementation of the Malabar Yard railroad improvements. Therefore, with the implementation of Malabar Yard Mitigation Measure GEO-1, no indirect adverse effect would occur.

TOPIC 3.9-B	Soil erosion

Direct Effects – Construction

The Malabar Yard study area is covered with impervious surfaces that protect local soils from erosion. Construction of the Malabar Yard railroad improvements would require excavation and grading activities that would result in removal of paved surfaces and minimal vegetation. The majority of the Malabar Yard study area consists of disturbed areas with existing rail tracks, developed properties, roadways, and the existing Malabar Yard. Therefore, construction of the Malabar Yard railroad improvements is not anticipated to result in substantial soil erosion or the loss of topsoil due to construction. No direct adverse effect would occur.

Direct Effects – Operations

Once the Malabar Yard railroad improvements have been constructed, there would not be a substantial amount of exposed surface that could be subjected to accelerated soil erosion during operations. The placement of ballast and other soil protection materials would provide stabilization to prevent erosion. No direct adverse effect would occur.

Indirect Effects – Construction and Operations

No indirect effects that would generate additional erosion or loss of topsoil are anticipated during construction or operations due to the disturbed nature of the Malabar Yard study area. No indirect adverse indirect effect would occur.

TOPIC 3.9-C	Collapse due to the use of corrosive unstable geologic units or soils

Direct Effects – Construction

Potentially collapsible soils may be present in localized areas within the Malabar Yard study area and the potential for hydrocollapse in the City of Vernon varies from low to moderate, as estimated from surficial geologic units within the Malabar Yard study area as depicted on USGS maps (CGS 2020; USGS 2020a). Due to the limited amount of site-specific geotechnical information available, construction activities may be subject to hydrocollapse. This is considered an adverse effect. Malabar Yard Mitigation Measure GEO-1 (described in Section 3.9.5) would require preparation of a final geotechnical report that would include provision for remediation of potential effects relative to potentially collapsible soils during construction and may include requirements to import fill material from other sources as necessary, pre-wetting, and/or chemical stabilization. Measures could also include requiring the contractor to replace upper portions of soils that exhibit high-corrosivity characteristics with soils that do not exhibit these characteristics, restricting use of corrosive soils as fill material, or requiring pre-construction characterization studies to account for soil properties prior to construction activities. Upon implementation of Malabar Yard Mitigation Measure GEO-1, no direct adverse effect would occur.

Direct Effects – Operations

Corrosion can weaken structures built on corrosive soils, potentially causing damage to foundations and buried pipelines when corrosive soils react with materials gradually over several decades. Due to the limited amount of site-specific geotechnical information available, and the high to low corrosion potential of the soils, this is considered an adverse effect if the corrosive soils are not accounted for during the design process. The Malabar Yard railroad improvements are required to conform to guidelines specified by relevant transportation and building agencies and codes, including those summarized in Table 3.9-1 (e.g., AREMA's *2016 Manual for Railway Engineering* and ASTM International standards and guidelines) and those identified under Malabar Yard Mitigation Measure GEO-1, which requires use of coated or corrosion-resistant steel or concrete materials. Implementation of Malabar Yard Mitigation Measure GEO-1 (described in Section 3.9.5) would minimize potential for structural failure resulting from corrosive soils. As discussed above, measures could include requiring replacement of the upper portions of soils that exhibit high-corrosivity characteristics with soils that do not exhibit these characteristics, restricting use of corrosive soils as fill material, or requiring pre-construction characterization studies to account for soil properties prior to construction activities. Upon implementation of Malabar Yard Mitigation Measure GEO-1, no direct adverse effect would occur.

Indirect Effects – Construction and Operations

Over the lifetime of the Project, there is potential for corrosive soils to cause damage to foundations and buried pipelines. In addition to compliance to all relevant transportation and building agencies and codes, implementation of Malabar Yard Mitigation Measure GEO-1 (described in Section 3.9.5) requires a final geotechnical report to be prepared by a licensed geotechnical engineer during final design of the project. The final geotechnical report will include site-specific

recommendations to mitigate the risk associated with conditions related to collapsible and corrosive soils. Upon implementation of Malabar Yard Mitigation Measure GEO-1, no indirect adverse effect would occur.

TOPIC 3-9-D	Expansive soils

Direct Effects – Construction

Based on the limited amount of site-specific geotechnical information available, construction of the Malabar Yard railroad improvements would occur in an area with potentially expansive soils, which could result in uplift pressures that could lead to structural damage to both track improvements and signal, safety, and civil improvements. This is considered an adverse effect. Implementation of Malabar Yard Mitigation Measure GEO-1 would minimize the potential for construction-related hazards resulting from expansive soils. Implementation of Malabar Yard Mitigation Measure GEO-1 (described in Section 3.9.5) would require preparation of a final geotechnical report that would address remediation of potential effects resulting from the risks associated with expansive soils during construction, which could include provisions to treat expansive soils with additives or replace the soil at specific locations. Upon implementation of Malabar Yard Mitigation Measure GEO-1, no direct adverse effect would occur.

Direct Effects – Operations

Although the Malabar Yard railroad improvements would be constructed in accordance with standard engineering practices, including those summarized in Table 3.9-1 (e.g., AREMA's *2016 Manual for Railway Engineering* and ASTM International standards and guidelines), the Malabar Yard railroad improvements would occur in an area with potentially expansive soils which could lead to structural damage from uplift pressures including sidewalk and pavement cracks and track damage. This is considered an adverse effect. Malabar Yard Mitigation Measure GEO-1 includes provisions to minimize potential for railroad improvements to be affected by expansive soils. After construction is complete and the Malabar Yard railroad improvements are operational, the likelihood that the Malabar Yard railroad improvements would be adversely affected by expansive soils is low. No direct adverse effect would occur.

Indirect Effects – Construction and Operations

Potentially expansive soils may be present within the Project footprint for the design options considered during construction. Additionally, improvements may be affected by the presence of expansive soils including sidewalk and pavement and other lightly loaded structures. Over the Project's lifetime, this would be considered a potentially adverse effect as expansive soils within the Malabar Yard study area may cause structural damage from uplift pressures including sidewalk and pavement cracks and track damage. Therefore, in addition to compliance to all relevant transportation and building agencies and codes, implementation of Malabar Yard Mitigation Measure GEO-1 (described in Section 3.9.5) requires a final geotechnical report to be prepared by a licensed geotechnical engineer during final design of the project. The final geotechnical report will include site-specific recommendations to mitigate the risk associated with

conditions related to expansive soils. Therefore, with the implementation of Malabar Yard Mitigation Measure GEO-1, no indirect adverse effect would occur.

3.9.5 Mitigation Measures

Implementation of the following mitigation measure would avoid or minimize potential adverse effects of the Malabar Yard railroad improvements related to geology, soils, and seismicity. Mitigation measures for the Malabar Yard railroad improvements include "MY" in the nomenclature as shown below.

MY GEO-1 **Prepare Final Geotechnical Report:** During final design, a final geotechnical report shall be prepared by a licensed geotechnical engineer (to be retained by Metro). The final geotechnical report shall address and include site-specific design recommendations on the following:

- Site preparation;
- Soil bearing capacity;
- Appropriate sources and types of fill;
- Liquefaction;
- Corrosive soils;
- Structural foundations; and
- Grading practices.

The recommendations shall mitigate the risk of seismic ground shaking and ground failure, including liquefaction. In addition to the recommendations for the conditions listed above, the report shall include results of subsurface testing of soil and groundwater conditions and shall provide recommendations as to the appropriate foundation designs that are consistent with the latest version of the CBC, as applicable at the time building and grading permits are pursued. Additional recommendations shall be included in that report to provide guidance for design of Malabar Yard railroad improvements in accordance with the *Manual for Railway Engineering*, and applicable city codes. The Project shall be designed and constructed to comply with the site-specific recommendations as provided in the final geotechnical report to be prepared.

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3.10 Hazardous Waste and Materials

This section provides an evaluation of potential effects related to hazardous waste and materials that may result upon implementation of the Malabar Yard railroad improvements.

3.10.1 Regulatory Framework

Table 3.10-1 identifies and summarizes applicable laws, regulations, and plans relative to hazardous waste and materials.

Table 3.10-1. Applicable Laws, Regulations, and Plans for Hazardous Waste and Materials

Law, Regulation, or Plan	Description
Federal	
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(18)*, 64 *Federal Register* 28545-28556 (1999)[1]	The FRA's Procedures requires the draft and final EIS to assess the transport and use of any hazardous materials and identify the level of protection afforded residents of the affected environment from construction and long-term operations.
Comprehensive Environmental Response, Compensation, and Liability Act (42 United States Code Section 9601 et seq.) (1980)	CERCLA provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA establishes requirements concerning closed and abandoned hazardous waste sites; provides for liability of persons responsible for releases of hazardous waste at these sites; and establishes a trust fund to provide for cleanup when no responsible party can be identified.
Hazardous Materials Transportation Act (49 United States Code 5101 et seq. and 49 Code of Federal Regulations 101, 106, 107, and 171–180) (1975) Hazardous Materials Transportation Uniform Safety Act (Public Law 101-615) (1990)	The USDOT, along with the California Highway Patrol and Caltrans, regulates transportation of hazardous materials between states. Together, these agencies determine container types used and license hazardous-waste haulers for transportation of hazardous waste on public roads. FRA enforces the Hazardous Materials Regulations, which include requirements that railroads and other transporters of hazardous materials, as well as shippers, have and adhere to security plans and also train their employees involved in offering, accepting, or transporting hazardous materials on both safety and security matters.
United States Department of Transportation Emergency Response Guidebook (2012)	This guidebook documents procedures and considerations for responding to a hazardous materials transportation incident. It provides a reference for hazardous materials placards and reference numbers used to denote the presence of a hazardous material in a truck, railcar

[1] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

Table 3.10-1. Applicable Laws, Regulations, and Plans for Hazardous Waste and Materials

Law, Regulation, or Plan	Description
	or pipeline. Separate guidance documents are included to provide unique procedures for different types of hazards.
National Oil and Hazardous Substances Pollution Contingency Plan (1968)	The National Oil and Hazardous Substances Pollution Contingency Plan is the federal plan for responding to oil spills and hazardous substances releases. The National Oil and Hazardous Substances Pollution Contingency Plan establishes the National Response Team and its roles in the National Response System, which include planning and coordinating response to major discharges of oil or hazardous waste, providing guidance to Regional Response Teams, coordinating a national program of preparedness planning and response, and facilitating research to improve response activities. U.S. EPA has pending revisions to the National Oil and Hazardous Substances Pollution Contingency Plan in order to align with the National Response Framework. These revisions have not been approved to date.
United States Environmental Protection Agency Oil Pollution and Prevention Regulation (1973)	U.S. EPA's oil spill prevention program includes the SPCC and the Facility Response Plan rules. The SPCC rule helps facilities prevent a discharge of oil into navigable waters or adjoining shorelines. The Facility Response Plan rule requires certain facilities to submit a response plan and prepare to respond to a worst-case oil discharge.
Occupational Safety and Health Act of 1970 (29 United States Code § 651 et seq.)	The Occupational Safety and Health Act, which is implemented by OSHA, contains requirements, as set forth in Title 29 of the CFR Section 1910, that are designed to promote worker safety, worker training, and a worker's right-to-know. OSHA requirements would be in effect during construction and operation to ensure the safety of workers. Title 49 of the CFR requires that every employee who transports hazardous materials receive training to recognize and identify hazardous materials and become familiar with hazardous materials requirements.
Resource Conservation and Recovery Act (42 United States Code Section 6901 et seq.) (1976)	Under RCRA, U.S. EPA has the authority to control the generation, transportation, treatment, storage, and disposal of hazardous waste by large-quantity generators (1,000 kilograms/month or more). Under the RCRA regulations, hazardous wastes must be tracked from the time of generation to the point of disposal. Additionally, all hazardous waste transporters are required to be permitted and must have an identification number. In California, U.S. EPA has delegated RCRA enforcement to Cal/EPA, DTSC.
Executive Order 12856 (58 *Federal Register* 41981) - Right-to-Know Laws and Pollution Prevention Requirements	EO 12856 was issued on August 3, 1993, directing federal agencies to conduct their facility management and acquisition activities to minimize the quantity of toxic chemicals entering any waste stream, including releases to the environment; report to the public on toxic chemicals entering any waste stream from their facilities, including releases to the environment; improve local emergency planning, response, and accident notification; and encourage markets for clean technologies

Table 3.10-1. Applicable Laws, Regulations, and Plans for Hazardous Waste and Materials

Law, Regulation, or Plan	Description
	and safe alternatives to extremely hazardous substances or toxic chemicals.
Emergency Planning and Community Right to Know Act (42 United States Code 11001 et seq. and 40 Code of Federal Regulations 350.1 et seq.) (1996)	The Emergency Planning and Community Right-to-Know Act of 1986 was authorized by Title III of the Superfund Amendments and Reauthorization Act to help communities plan for chemical emergencies. It requires industry to report on the storage, use, and releases of certain chemicals to federal, state, tribal, territorial, and/or local governments. It also requires these reports to be used to prepare for and protect their communities from potential risks.
Federal Compliance with Pollution Control (Executive Order 12088) [October 13, 1978] and Federal Insecticide, Fungicide, and Rodenticide Act (7 United States Code 136 and 40 Code of Federal Regulations 152–171) [June 25, 1947]	The Federal Insecticide, Fungicide, and Rodenticide Act is the federal statute that governs the registration, distribution, sale, and use of pesticides in the U.S. With certain exceptions, a pesticide is any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant, or desiccant, or desiccant, or any nitrogen stabilizer.
Superfund Amendments and Reauthorization Act (42 United States Code § 9601 et seq.) (1986)	CERCLA enlarged and reauthorized the Superfund Amendments and Reauthorization Act of 1986 (SARA, PL 99-499). The U.S. EPA compiles a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the U.S. and its territories, known as the National Priorities List.
Superfund Enterprise Management System Archive (2015)	The SEMS-ARCHIVE tracks sites that have no further interest under the federal Superfund program. The list was formerly known as the Comprehensive Environmental Response, Compensation, and Liability Information System–NFRAP, renamed to SEMS-ARCHIVE by U.S. EPA in 2015. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of U.S. EPA's knowledge, assessment at a site has been completed, and that U.S. EPA has determined no further steps will be taken to list the site on the NPL, unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time.
Toxic Substances Control Act (15 United States Code Section 2601 et seq.) (1976)	The TSCA of 1976 provides U.S. EPA with authority to require reporting, record-keeping, and testing requirements, and restrictions relating to chemical substances and/or mixtures. Certain substances are generally excluded from TSCA, including, among others, food, drugs, cosmetics, and pesticides. TSCA addresses the production, import, use, and disposal of specific chemicals, including polychlorinated biphenyls, asbestos, radon, and lead-based paint. The Frank R. Lautenberg Chemical Safety for the 21st Century Act was implemented on June 22, 2016, as an update to the TSCA.
Clean Water Act (33 United States Code § 1344) – National Pollutant Discharge	The CWA sets regulations of discharges and spills of pollutants, including hazardous materials, to surface waters and groundwater. The

Table 3.10-1. Applicable Laws, Regulations, and Plans for Hazardous Waste and Materials

Law, Regulation, or Plan	Description
Elimination System (Section 402[p]) (1972)	SWRCB implements and enforces the CWA, as well as additional state regulations. Plans developed for this project, such as BMPs and Contaminated Materials Management Plans, will provide procedures that comply with the CWA and SWRCB regulations for protecting water quality.
Clean Air Act (1970)	The CAA regulates air pollutant emissions from stationary and mobile sources. This law authorizes U.S. EPA to establish NAAQS to protect public health and public welfare and to regulate emissions of hazardous air pollutants.
Safe Drinking Water Act (1976)	The Safe Drinking Water Act sets the standards for drinking water quality and monitors states, local authorities, and water suppliers who enforce those standards.
State	
Hazardous Materials Release Response Plans and Inventory Act (Business Plan Act) (2016)	The Business Plan Act requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. A business plan includes an inventory of hazardous materials handled, facility floor plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee training in safety and emergency response procedures (California Health and Safety Code, Division 20, Chapter 6.95, Article 1). Per the requirements of this act, the preparation of a Hazardous Materials Business Plan would be required for the safe storage, containment, and disposal of chemicals and hazardous materials related to the proposed project operations, including waste materials. As of May 11, 2016, all sections within the CCR Title 19, Division 2, Chapter 4 have been renumbered. This change was necessary because SB 84 (2015) added Article 3.9 (commenting with Section 8574.30) to Government Code Title 2, Division 1, Chapter 7, Regional Railroad Accident Preparedness and Immediate Response. These new regulations will be added immediately following the renumbering of Chapter 4.
State of California Occupational Safety and Health Administration (California Code of Regulations Title 8)	Cal/OSHA sets and enforces regulations related to safety in the workplace. Plans that will be developed during the course of this project, HASPs in particular, will comply with Cal/OSHA regulations.
California Code of Regulations Title 22 (22 California Code of Regulations Division 4.5)	Title 22 of the CCR sets regulations related to the identification and proper handling and disposal of hazardous wastes. The handling of waste that will occur during the course of construction and operations will comply with the regulations set forth in Title 22, as they relate to the storage, handling, identification, transportation, and disposal of hazardous wastes.

Table 3.10-1. Applicable Laws, Regulations, and Plans for Hazardous Waste and Materials

Law, Regulation, or Plan	Description
California Public Resources Code Section 21151.4	This code requires the lead agency to consult with any school district with jurisdiction over a school within 0.25 mile of the proposed action about potential effects on the school if the proposed action might reasonably be anticipated to emit hazardous air pollutant emissions or handle an extremely hazardous substance or a mixture containing an extremely hazardous substance.
California Environmental Protection Agency	Cal/EPA and the SWRCB establish rules governing the use of hazardous materials and the management of hazardous waste. Applicable state and local laws include the following: • Aboveground Petroleum Storage Tank Act; • ACM Regulations; • California Accidental Release Prevention Program; • Emergency Response to Hazardous Materials Incidents; • Hazardous Substances Information and Training Act; • Hazardous Waste Control Law; • Hazardous Waste Generator and onsite Hazardous Waste Treatment Programs (i.e., Tiered Permitting); • Public Safety/Fire Regulations/Building Codes; • Safe Drinking Water and Toxic Enforcement Act; • TSCA; and • Underground Storage of Hazardous Substances Act. Within Cal/EPA, DTSC has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the state agency, for the management of hazardous materials and the generation, transport, and disposal of hazardous waste under the authority of the Hazardous Waste Control Law.
Local	
City of Vernon Local Hazard Mitigation Plan	The City of Vernon is currently preparing an update to the LHMP. This plan help create a safer community for residents, businesses, and visitors. The LHMP allows public safety officials and city staff, elected officials, and members of the public to understand the threats from natural and human-caused hazards in our community. The plan will also recommend specific actions to proactively decrease these threats before disasters occur.

Table 3.10-1. Applicable Laws, Regulations, and Plans for Hazardous Waste and Materials

Law, Regulation, or Plan	Description
City of Vernon General Plan Safety Element (2015)	The Safety Element in part provides goals, objectives, policies, and programs related to hazards mitigation, emergency response, and disaster recovery and implementation to carry out these policies. The Safety Element identifies the natural and man-made hazards which affect public safety in the City and establishes policies the City will pursue to minimize associated risks to life and property. Because these hazards can have significant economic consequences, identifying, understanding, and guarding against these hazards greatly benefits those who own property, work, and live in Vernon.

Notes:
ACM=Asbestos Containing Material; BMP=Best Management Practice; CAA=Clean Air Act; Cal/EPA=California Environmental Protection Agency; Cal/OSHA=California Occupational Safety and Health Administration; Caltrans=California Department of Transportation; CCR=California Code of Regulations; CERCLA=Comprehensive Environmental Response, Compensation, and Liability Act; CFR=Code of Federal Regulations; CWA=Clean Water Act; DTSC=Department of Toxic Substances Control; EO=Executive Order; FRA=Federal Railroad Administration; HSAP=Health and Safety Plans; LHMP=Local Hazard Mitigation Plan; NAAQS=National Ambient Air Quality Standards; NPL=National Priorities List; NFRAP=No Further Remedial Action Planned; OSHA=Federal Occupational Safety and Health Administration; RCRA=Resource Conservation and Recovery Act; SARA=Superfund Amendments and Reauthorization Act; SEMS-ARCHIVE=Superfund Enterprise Management System Archive; SPCC=Spill Prevention, Control, and Countermeasure; SWRCB=State Water Resources Control Board; TSCA=Toxic Substances Control Act; U.S. EPA=United States Environmental Protection Agency; USDOT=Department of Transportation

3.10.2 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the Malabar Yard railroad improvements would affect:

- Transport, use, or disposal of hazardous materials;
- Risk of hazardous materials release into the environment; and/or
- Hazardous materials sites.

Geographic Area Considered

The Malabar Yard study area is generally used to characterize the affected environment. The following geographic areas were used to determine potential effects:

- **Hazardous material and waste issues on adjacent properties:** Maximum extent of the Project footprint for the design options considered for each of the Malabar Yard railroad improvements plus a 150-foot buffer.
- **Recognized environmental conditions (REC) sites:** Maximum extent of the Project footprint for the design options considered plus 0.25 mile.

- **Oil and gas wells:** Maximum extent of the Project footprint for the design options considered plus 0.25 mile.

Methodology

Research and Site Reconnaissance

Many sources of information were used to establish baseline conditions within the Malabar Yard study area where hazardous materials and wastes have or may have been released and that could be disturbed during planned construction, operation, or maintenance activities. These sources included an environmental records review; historical research, which included a review of historical aerial photographs; and an agency records review, which included a review of the SWRCB GeoTracker and Department of Toxic Substances Control (DTSC) EnviroStor online databases. This methodology was not intended to support a parcel-level due diligence assessment for the purpose of property acquisition nor was it intended to satisfy the Phase I Environmental Site Assessment requirements as defined by ASTM Standard E 1527-13 (ASTM 2013) or the All-Appropriate Inquiry requirements as defined in 40 CFR Part 312. Interviews with property owners, reconnaissance of individual properties, or field sampling/analysis was not performed. Effects associated with hazardous waste and materials that could result from construction and operation of the Malabar Yard railroad improvements were evaluated qualitatively based on site conditions in the study area, proximity of the Project footprint for the design options considered to documented RECs and expected construction practices (CHSRA 2018).

Terminology

For purposes of this section, the term “hazardous materials” refers to both hazardous substances and hazardous wastes. A “hazardous material” is defined by federal regulations as “a substance or material that … is capable of posing an unreasonable risk to health, safety, and property when transported in commerce” (49 CFR 171.8). Soil that is excavated from a site containing hazardous materials is a hazardous waste if it exceeds specific criteria listed in CCR Title 22. Cleanup requirements are determined on a case-by-case basis by the agency with lead jurisdiction over the project. Under CCR Title 22, the term “hazardous substance” refers to both hazardous materials and hazardous wastes, both of which are classified according to four properties: (1) toxicity; (2) ignitability; (3) corrosiveness; and (4) reactivity (CCR Title 22, Chapter 11, Article 3).

The ASTM International E1527-13 Standard was used for this evaluation and defines the following categories of RECs:

- ***REC:*** The presence, or likely presence, of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment, (2) under conditions indicative of a release to the environment, or (3) under conditions that pose a material threat of a future release to the environment. *De minimis* conditions are not RECs (as defined below).

- ***Historic REC:*** A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).
- ***Controlled REC:*** An REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

ASTM E1527-13 defines "release" as a release of any hazardous substance or petroleum product and shall have the same meaning as the definition of "release" in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 UUSC §9601(22)).

An additional condition that is not included under the definitions of a REC but is defined by ASTM E1527-13 is *de minimis*. *De minimis* is a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are neither RECs nor Controlled RECs.

In addition to the ASTM-based "REC" classification of a site, a relative risk ranking based on environmental professional judgment was employed that includes several investigative elements to describe "sites of concern." A site of concern is a site that the investigative process has determined to have sufficient possibility of contamination, which warrants attention during the Phase I ESA investigation. A site of concern may or may not ultimately be classified as a REC site as defined by ASTM, yet still may be "of concern" to the proposed infrastructure. A site of concern may or may not be carried forward in recommendations for further investigation, depending upon the specific issues and characteristics associated with the site.

Once the elements of the investigation process were completed, identified sites of concern were categorized by an environmental professional using a subjective risk ranking system, classifying the sites with low risk, moderate risk, or high-risk determinations. The following provides general descriptions of each category:

- **Low risk** sites are those sites that have few indications of potential for release of hazardous materials. On some occasions, sites that have had a hazardous materials issue in the past but have been remediated with approval of the state environmental agency or local regulatory agencies, may qualify as low risk. Examples of low-risk sites include undeveloped or agricultural property, residential property, or benign commercial

properties such as office buildings, warehouses, distribution facilities, or municipal facilities with no listed violation.

- **Moderate risk** sites are those sites that have some indications of possible hazardous materials issues. A moderate risk site may appear on a database as having a permit to handle hazardous materials but has recorded no violations to date. Another way that a site could be interpreted as moderate risk would be if the environmental records search indicated no listing, but the site is an auto repair facility with visible surface staining. Examples of moderate risk sites include auto repair garages, welding shops, or manufacturing facilities with relatively low-risk listings, such as disposing of small quantities of hazardous waste or having a hazardous materials business plan on file in the environmental databases defined in the Methodology section.
- **High risk** sites are those sites that have a high potential for releasing hazardous materials to the soil or groundwater or have a recorded release issue. Examples of high-risk sites include current automotive service stations, bulk fueling terminals, sites listed in environmental databases as having had a release, or a known release that has not been remediated.
- **Indeterminate risk** sites are those which, at the time of report preparation, did not include sufficient information to include a high, moderate, or low ranking. No indeterminate risk sites were identified in the Malabar Yard study area.

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects for each of the topics considered is presented below.

Transport, Use, or Disposal of Hazardous Materials

Project-related effects would be considered adverse if the Malabar Yard railroad improvements improperly transport, use, or dispose of hazardous materials resulting in a health hazard to construction employees, the public, and the environment.

Risk of Hazardous Materials Release into the Environment

Project-related effects would be considered adverse if the Malabar Yard railroad improvements result in an accidental release of hazardous materials including contaminated soil, groundwater, soil vapors, asbestos, and lead-based paint causing construction employees, the public, and the environment to be exposed to health hazards.

Hazardous Materials Sites

Project-related effects would be considered adverse if the Malabar Yard railroad improvements result in ground disturbance of REC sites with moderate or high-risk rankings and exposes

construction employees, the public, and the environment to hazardous materials including contaminated soil and groundwater.

3.10.3 Affected Environment

Hazardous Materials

Site and Vicinity Characteristics

The Malabar Yard study area is located in the City of Vernon, a built urban environment consisting of various land uses that have developed and transformed over time. Land uses in the Malabar Yard study area are primarily industrial and include mixed commercial, transportation-railroad, transportation, communications, and utilities.

The Malabar Yard study area is located southwest of the Los Angeles River. The local geologic substrate includes areas underlain by Holocene and Pleistocene alluvium deposits consisting of generally unconsolidated sand, silt, and variable quantities of gravels, cobbles, and occasional boulders. Unmapped and undocumented artificial fill materials are anticipated to underlie portions of the study area. The artificial fill likely varies in composition but is generally expected to contain construction debris as well as imported natural earth materials. A review of boring logs for geotechnical activities performed in 2018 for areas in the vicinity of Malabar Yard railroad improvements indicate that groundwater was not encountered within the maximum explored depth of approximately 83 feet below ground surface at borings performed north of the Malabar Yard study area. Although groundwater was not encountered, it cannot be ruled out entirely based on the fluctuation of the groundwater table over time. If groundwater is exposed during potential dewatering activities, contaminants may be present given the presence of nearby REC sites.

Environmental Records Review

An environmental information database search was completed in December 2017. The database search resulted in two REC sites located within 0.25 mile of the maximum extent of the Project footprint for the design options considered. Both of these sites were determined to be High Risk due to the proximity to Malabar Yard railroad improvements (Figure 3.10-1 and Table 3.10-3).

Table 3.10-2. Identified Recognized Environmental Condition Sites in Vicinity of Malabar Yard Railroad Improvements

Map Code[a]	Site Name	Address	Regulatory Listings	Upgradient/ Downgradient	Determination/ Risk Ranking	Contaminants of Concern
231	BCBG, Minson Corp, Mallin Casual Furniture, Sam Mallin	2665 North Leonis Blvd, Vernon, CA	ENVIROSTOR	Upgradient	REC/High Risk Soil Contamination	Petroleum hydrocarbons, arsenic
232	TC Toys	4545 Pacific Blvd, Vernon, CA	ENVIROSTOR	Downgradient	REC/High Risk Soil Contamination	perchloroethylene, trichloroethylene

Source: CHSRA 2018
Notes:
[a] ***This map code corresponds to Figure 3.10-1.***
REC=recognized environmental condition

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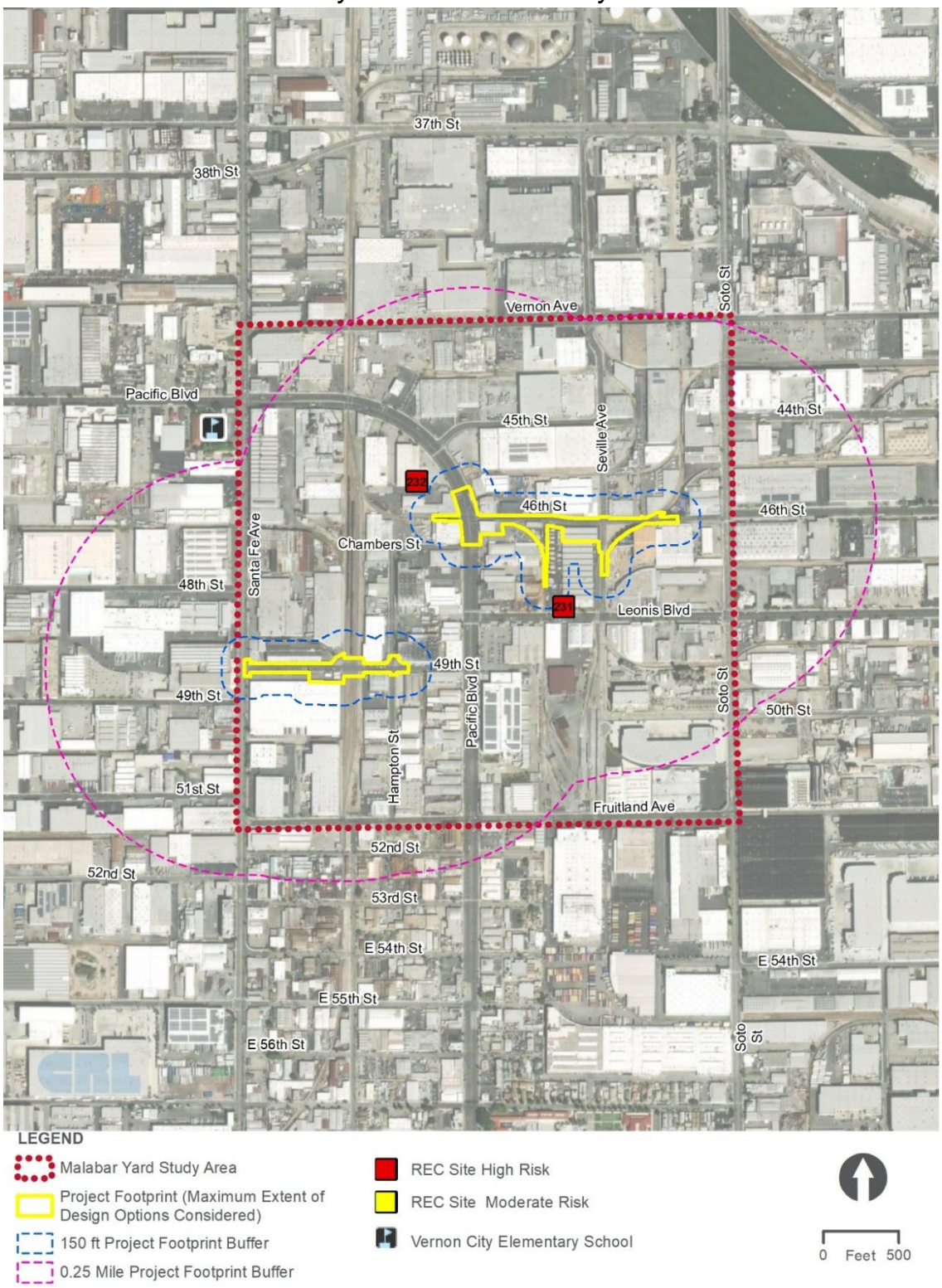
Figure 3.10-1. Location of Schools and Recognized Environmental Condition Sites in the Vicinity of Malabar Yard Study Area



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Source: CHSRA 2018
Notes:
[a] This map code corresponds to Figure 3.10-1.
REC=recognized environmental condition

Historical Record Research

The objective of reviewing historical use information is to develop a history of previous land uses in the vicinity of the Malabar Yard study area and to assess said uses for potential hazardous materials that may affect the Malabar Yard railroad improvements. The following sources were referenced as part of this research:

- ***Historical Aerial Photographs:*** Historical aerial photographs are beneficial because they allow for the review of features of properties near the Malabar Yard study area over a long period of time. The following years were reviewed: 1928, 1938, 1948, 1963, 1972, 1974, 1986, 1989, 1990, 1994, and 2002.
- ***Historical Topographic Maps:*** Historical topographic maps are beneficial because they allow for the review of evidence of built structures, fill areas, aboveground storage tanks, and oil drilling sites that may represent areas of hazardous materials and waste use or storage within the study area. The following years were reviewed: 1896, 1898, 1900, 1901, 1902, 1925, 1926, 1927, 1928, 1935, 1936, 1942, 1945, 1947, 1949, 1950, 1951, 1952, 1953, 1964, 1965, 1966, 1972, 1981, and 1994.

In 1928, the properties located east of the Malabar Yard study area (across the Los Angeles River) were partially developed with commercial buildings, while the adjoining/nearby properties west of the Los Angeles River were fully developed with commercial/industrial buildings. All properties were substantially developed with primarily commercial/industrial buildings by the late 1930s/early 1940s. Areas of identified potential environmental concern consisted of aboveground

storage tanks (and associated operations) and several basins (rectangular-shaped retention ponds) located to the north of the Malabar Yard study area in the City of Los Angeles.

Oil Seeps and Gas Fields

No active or inactive oil or gas wells, fields, or seeps are located within the Malabar Yard study area or within a 0.25-mile radius of the maximum extent of the Project footprint for the design options considered.

Asbestos and Lead

The Malabar Yard study area is not located within a region in the county identified as containing serpentine and ultramafic rock; however, older buildings have the potential to contain asbestos and/or lead. As previously stated in the historic research section, the Malabar Yard study area has been developed into commercial and industrial uses from the turn of the twentieth century. Asbestos is designated as a hazardous substance when friable fibers are released into the air because the fibers are small enough to lodge in the lung tissue and cause health problems. The presence of asbestos-containing materials (ACM) in existing buildings poses an inhalation threat only if the ACMs are found to be in a friable state. If the ACMs are not friable, there is no inhalation hazard because asbestos fibers remain bound in the material matrix. Emissions of asbestos fiber to the ambient air, which can occur during activities such as renovation or demolition of structures made with ACMs (e.g., insulation), are regulated in accordance with Section 112 of the FCAA.

Demolition of structures containing ACM requires specific remediation activities regulated by federal, state, and local laws. The California Department of Industrial Relations and OSHA have established comprehensive programs to address this issue. Specifically, in Title 8 of the California Code of Regulations, Section 1529, policies and procedures have been promulgated that establish requirements for the transport, disposal, storage, containment, and housekeeping activities associated with activities involving asbestos. Compliance with stipulations and requirements detailed in the California Code of Regulations, and likely the development of facility- or building-specific asbestos management plans, would be required to ensure full disclosure and awareness of risks, to establish project-specific requirements for containment and housekeeping, and to protect workers and other local sensitive populations from dangerous exposure levels associated with demolition of facilities (commercial, warehouse, etc.) that were built when asbestos was a common element in many construction materials (e.g., insulation, fire proofing, and tile/mastic).

Human exposure to lead has been determined by U.S. EPA and OSHA to be an adverse health risk, particularly to young children. Based on the age (e.g., pre-1970s) of many of the buildings and structures within the Malabar Yard study area, it is possible that these buildings were constructed when ACMs and lead-based paints (LBP) were readily used in exterior coatings.

Proximity to Schools

There are no schools located within the Malabar Yard study area. As shown in Figure 3.10-1, the nearest school, Vernon City School at 2360 East Vernon Avenue, is located outside of the

Malabar Yard study area and outside of the 0.25-mile buffer from the Project footprint for the design options considered.

3.10.4 Environmental Consequences

No Action Evaluation

The following topics were evaluated to determine potential effects if the Malabar Yard railroad improvements in the City of Vernon were not implemented in conjunction with the Build Alternative:

Transport, Use, or Disposal of Hazardous Materials

If the Malabar Yard railroad improvements were not implemented, the use of hazardous materials and substances would not be required, and hazardous wastes would not be generated. Therefore, no direct or indirect effect related to the transport, use, or disposal of hazardous materials would occur.

Risk of Hazardous Materials Release into the Environment

If the Malabar Yard railroad improvements were not implemented, no demolition or construction activities would occur that could release hazardous materials into the environment. Therefore, no direct or indirect effect would occur.

Hazardous Materials Sites

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effect related to hazardous materials sites would occur because construction activities would not occur near existing RECs and risk encountering contaminated soil and/or groundwater.

Evaluation of Malabar Yard Railroad Improvements

TOPIC 3.10-A	Transport, use, or disposal of hazardous materials

Direct Effects – Construction

Transport, Use, or Disposal of Hazardous Materials

During construction, the use of hazardous materials and substances would be required, and hazardous wastes would be generated.

- Hazardous materials would include, but would not be limited to, vehicle fuels, asphalt/concrete, lubricants, epoxy resins, drilling fluids, and paints.
- Hazardous wastes would include, but not be limited to, soils contaminated by petroleum hydrocarbons, pesticides, herbicides, asbestos, heavy metals, or other hazardous materials, as well as ACM and LBP that could also be generated during demolition of roadways, structures, and track modifications necessary to support construction.

If a spill of hazardous materials were to occur, the accidental release could pose a hazard to construction employees, the public, and the environment, depending on the magnitude of the spill and relative hazard of the material released. Although typical construction management practices limit and often eliminate the risk of such accidental releases, the extent and duration of construction presents a possible risk to the environment. This is considered an adverse effect. However, implementation of Malabar Yard Mitigation Measure HAZ-1 (described in Section 3.10.5) requires implementation of a Construction HMMP. The HMMP would outline provisions for safe storage, containment, and disposal of chemicals and hazardous materials used or exposed during construction, including the proper locations for disposal. Upon implementation of Malabar Yard Mitigation Measure HAZ-1, no direct adverse effect would occur.

Transport, Use, and Disposal of Contaminated Soil and Groundwater

Contaminated soil and groundwater are also expected to be encountered during soil excavations and dewatering activities, which would require specialized handling, treatment, and eventual off-site transport. If contaminated soil and/or groundwater is encountered and is not adequately managed, potential hazards could be generated by the routine transport, use, and disposal of contaminated soils and/or contaminated groundwater during construction of the Malabar Yard railroad improvements. This is considered an adverse effect.

Implementation of Malabar Yard Mitigation Measure HAZ-1 (described in Section 3.10.5) requires implementation of an HMMP that would include provisions for safe storage, containment, and disposal of contaminated soils and contaminated groundwater used or exposed during construction, including the proper locations for disposal. Implementation of Malabar Yard Mitigation Measure HAZ-1 would minimize the potential for construction effects to occur on the public or the environment with proper implementation of the outlined management measures. Upon implementation of Malabar Yard Mitigation Measure HAZ-1, no direct adverse effect would occur.

Direct Effects – Operations

The routine transport, storage, use, or disposal of hazardous materials and wastes during operations of the Malabar Yard railroad improvements could result in accidental releases from improper handling of hazardous materials and wastes. However, the volume of hazardous materials and wastes to be transported, used, or disposed of during operations would not be substantially different than the existing condition in the vicinity of Malabar Yard. Freight storage would be accommodated at Malabar yard, which could potentially increase the quantity of hazardous materials on site but would not substantially increase the risk of accidental release. The limited potential for release of hazardous materials and wastes during the routine transport, use, storage, and disposal of such substances used during operation of any combination of design options would not create substantial hazards to the public or the environment. BNSF facilities already in operation would continue to provide areas for safe storage, containment, and disposal of chemicals and hazardous materials during operations, including waste materials, in compliance with existing regulations and legislation governing the safe handling and disposal of hazardous materials. Therefore, no direct adverse effect would occur.

Indirect Effects – Construction and Operations

No indirect construction-related effects related to transport, use, or disposal of hazardous materials would occur because all work would occur within the limits of the Project footprint for the design options considered throughout the construction duration. After construction is complete, no further transport, use, or disposal of hazardous materials would occur. The Malabar Yard railroad improvements would facilitate an increase in freight movements with implementation of the 46th Street Connector. This could increase the frequency of which hazardous materials are transported through the Malabar Yard study area. However, private railway carriers, such as BNSF, are subject to state and federal regulations, and the railroad improvements would not increase the likelihood of improper transportation or disposal of hazardous materials. Therefore, no indirect adverse effect would occur.

TOPIC 3.10-B	Risk of hazardous materials release into the environment

Direct Effects – Construction

Recognized Environmental Condition Sites

The Malabar Yard study area contains two high risk REC sites (Table 3.10-3 and Figure 3.10-1). The close proximity of the Malabar Yard railroad improvements to these existing RECs could result in potential exposure to contaminated soil and/or groundwater or migration of contaminants (e.g., by groundwater) during construction activities. Demolition of older railroad ties treated with creosote and newer ties treated with chromated copper arsenate can release heavy metals including Polycyclic Aromatic Hydrocarbons (PAHs) and arsenic. Construction activities could also release herbicides that were applied to combat weeds within the railroad ROW, PAHs and heavy metals from coal ash and cinders in track ballast that would be removed, and volatile and semi-VOCs. This could be considered an adverse effect if not avoided or minimized, because potential exposure to contaminated soil and/or groundwater, heavy metals, herbicides, and volatile and semi-VOCs could pose a health hazard to construction employees, the public, and the environment.

Implementation of Malabar Yard Mitigation Measures HAZ-1 through HAZ-4 (described in Section 3.10.5) would reduce effects in the event a release of hazardous materials occurs during construction.

- Malabar Yard Mitigation Measure HAZ-1 requires preparation of an HMMP for construction-related activities to outline provisions for safe storage, containment, and disposal of chemicals and hazardous materials, contaminated soils, and contaminated groundwater used or exposed during construction, including the proper locations for disposal.
- Malabar Yard Mitigation Measure HAZ-2 requires preparation of a Phase II ESA prior to final design. The Phase II ESA will focus on likely sources of contamination for properties within the Project footprint for the design options selected that would be affected by excavation. A Phase II ESA Report will summarize the results of the drilling and sampling

activities and provide recommendations to be implemented based on the investigation's findings.

- Malabar Yard Mitigation Measure HAZ-3 requires implementation of a General Construction Soil Management Plan prior to construction to include general provisions for how soils will be managed within the Project footprint for the design options selected for the duration of construction.
- Malabar Yard Mitigation Measure HAZ-4 requires implementation of parcel-specific Soil Management Plans for known contaminated sites for submittal and approval by DTSC. The plans will include specific hazards and provisions for how soils will be managed for known contaminated sites. For individual properties with known contaminants, parcel-specific Health and Safety Plans (HASPs) will also be prepared for submittal and approval by DTSC. The HASPs will be prepared to meet OSHA requirements, Title 29 of the CFR 1910.120 and CCR Title 8, Section 5192, and all applicable federal, state, and local regulations and agency ordinances related to the proposed management, transport, and disposal of contaminated media during implementation of work and field activities.

Upon implementation of Malabar Yard Mitigation Measures HAZ-1 through HAZ-4, no direct adverse effect would occur.

Soil Vapor Migration

The Malabar Yard study area is not located near any oil fields. However, as noted in Table 3.10-3, one of the REC sites contains petroleum hydrocarbons and a second REC site contains chlorinated solvents (perchloroethylene and trichloroethylene). Therefore, soils contaminated with petroleum products or chlorinated solvents could be directly encountered during excavation or areas where contaminated soil vapor from these sites may have migrated could be encountered, which could release volatile contaminant vapors during excavations. An accidental release of volatile contaminant vapors during excavation could pose a health hazard to construction employees, the public, and the environment. This is considered an adverse effect. Malabar Yard Mitigation Measure HAZ-5 (described in Section 3.10.5) would reduce potential risks related to volatile contaminant vapors during construction by requiring contractors to stop work and follow procedures outlined in the HMMP. Additionally, Malabar Yard Mitigation Measure HAZ-5 requires contractors to follow all applicable local, state, and federal regulations regarding discovery, notification, response, disposal, and remediation for hazardous materials encountered during the construction process. Therefore, with implementation of Malabar Yard Mitigation Measure HAZ-5, no direct adverse effect would occur.

Asbestos and Lead

Based on the age (e.g., pre-1970s) of many of the buildings within the boundary of the Project footprint for the design options considered, it is possible that these buildings were constructed when ACMs and LBPs were readily used in exterior coatings. Human exposure to lead has been determined by U.S. EPA and OSHA to be an adverse health risk, particularly to young children.

Construction of Design Option 1 at 46th Street would include demolition of up to two buildings and a portion of a third building where a clothing store, furniture store, and warehouse are located along 46th Street. Design Option 2 at 46th Street includes demolition of up to one building. The accidental release of ACMs or lead into the environment could occur during demolition activities. This is considered an adverse effect because an accidental release of ACMs or lead during demolition activities could pose a health hazard to construction employees, the public, and the environment. Implementation of Malabar Yard Mitigation Measure HAZ-6 (described in Section 3.10.5) would reduce potential risks related to asbestos, LBPs, and other materials falling under the Universal Waste requirements. Malabar Yard Mitigation Measure HAZ-6 requires a survey to be conducted prior to the demolition of any structures constructed prior to the 1970s to determine the presence of hazardous building materials, such as ACMs, LBPs, and other materials falling under the Universal Waste requirements. If any hazardous building materials are discovered, prior to demolition of any structures, a plan for proper removal will be prepared in accordance with applicable OSHA and the Los Angeles County Department of Public Health requirements. With implementation of Malabar Yard Mitigation Measure HAZ-6, no direct adverse effect would occur.

Direct Effects – Operations

Future operations at Malabar Yard would involve the continuation of the use of hazardous materials and wastes, such as gasoline, brake fluids, and coolants that could be subject to accidental releases. The handling of such materials would be subject to federal (40 CFR 239-282) regulations that generally require that these materials not be released to the environment or disposed of as general refuse. BNSF would also be required to comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. Applicable permits would require preparation of an Hazardous Materials Business Plan, per California‘s Health and Safety Code, that would include provisions for safe storage, containment, and disposal of chemicals and hazardous materials during operations, including waste materials. Operation of Malabar Yard under any combination of design options would be similar to existing conditions and the handling of hazardous materials would be subject to approval by the applicable regulatory agency. With the installation of the 1,000-foot connector track and realignment of the existing is expected due to the heavy presence of existing freight rail operations in the immediate surrounding area. Therefore, no direct adverse effect would occur.

Indirect Effects

Considering BNSF’s freight operations in the City of Vernon, including at Malabar Yard, are already managed in accordance with applicable regulations, the potential for increased hazardous materials release is not expected to occur. No change to the nature or magnitude of the risk is expected. No indirect adverse effect would occur.

TOPIC 3.10-C	Hazardous materials sites

Direct Effects – Construction

As shown in Figure 3.10-1, two REC sites with high-risk ranking were identified within 0.25 mile of the maximum extent of the Project footprint for the design options considered. The close proximity of these existing RECs to potential construction activities would carry the potential for encountering contaminated soil and/or groundwater. This is considered an adverse effect because potential exposure to contaminated soil and/or groundwater from REC sites with high-risk ratings could pose a health hazard to construction employees, the public, and the environment. Active construction areas where known contaminated soil and groundwater can be encountered would be fenced off and would not be accessible to the general public. Additionally, implementation of Malabar Yard Mitigation Measures HAZ-1 and HAZ-2 would minimize potential for hazards to the environment resulting from the release of contaminants from REC sites with high-risk ratings.

Malabar Yard Mitigation Measure HAZ-1 requires implementation of an HMMP that would include provisions for safe storage, containment, and disposal of chemicals and hazardous materials, contaminated soils, and contaminated groundwater used or exposed during construction, including the proper locations for disposal. Malabar Yard Mitigation Measure HAZ-2 requires preparation of a Phase II ESA. The Phase II ESA will focus on likely sources of contamination (based on the completed Phase I ESA) for properties within the Project footprint that would be affected by excavation. The Phase II ESA Report will summarize the results of the drilling and sampling activities and provide recommendations to be implemented based on the investigation's findings. Upon implementation of Malabar Yard Mitigation Measures HAZ-1 and HAZ-2, no direct adverse effect would occur.

Direct Effects – Operations

After construction of the Malabar Yard railroad improvements, the identified REC sites would not be disturbed by the Project and, therefore, would not require remediation or coordination with the governing agency. No adverse effect would occur.

Indirect Effects

Potential indirect effects could occur in the event hazardous materials migrate into other properties while construction is occurring. This is considered an adverse effect. However, prior to construction, REC sites that would be impacted by excavation activities and that are identified as high-risk would be further analyzed in a Phase II ESA (Malabar Yard Mitigation Measure HAZ-2). Malabar Yard Mitigation Measure HAZ-2 requires Metro to prepare a Phase II ESA prior to section of the final design options for the railroad improvements. The Phase II ESA will focus on likely sources of contamination (based on the completed Phase I ESA) for properties within the Project footprint that would be affected by excavation. Metro will implement the recommendations in the Phase II ESA to reduce the potential of hazardous materials migrating into other properties.

In addition, implementation of Malabar Yard Mitigation Measures HAZ-3 and HAZ-4 (described in Section 3.10.5) would minimize potential indirect effects associated with sources of contamination adjacent to the Project footprint for the design options considered.

Malabar Yard Mitigation Measure HAZ-3 requires implementation of a General Construction Soil Management Plan that would include general provisions for how soils will be managed within the Project footprint for the selected design options for the duration of construction. Malabar Yard Mitigation Measure HAZ-4 requires implementation of parcel-specific Soil Management Plans for known contaminated sites for submittal and approval by DTSC. The plans will include specific hazards and provisions for how soils will be managed for known contaminated sites. For individual properties with known contaminants, parcel-specific HASPs will also be prepared for submittal and approval by DTSC. The HASPs will be prepared to meet OSHA requirements, Title 29 of the CFR 1910.120 and CCR Title 8, Section 5192, and all applicable federal, state and local regulations and agency ordinances related to the proposed management, transport, and disposal of contaminated media during implementation of work and field activities. Upon implementation of Malabar Yard Mitigation Measures HAZ-2 through HAZ-4, no indirect adverse effect would occur.

3.10.5 Mitigation Measures

Implementation of the following mitigation measures would avoid or minimize potential adverse effects from hazardous waste or materials during construction and throughout operation of the Malabar Yard railroad improvements. Mitigation measures for the Malabar Yard railroad improvements include “MY” in the nomenclature as shown below.

MY HAZ-1 **Prepare a Construction Hazardous Materials Management Plan (HMMP):** Prior to construction, an HMMP shall be prepared by the contractor that outlines provisions for safe storage, containment, and disposal of chemicals and hazardous materials, contaminated soils, and contaminated groundwater used or exposed during construction, including the proper locations for disposal. The HMMP shall be prepared to address the area of the Project footprint for the selected design options, and include, but not be limited to, the following:

- A description of hazardous materials and hazardous wastes used (29 CFR 1910.1200).
- A description of handling, transport, treatment, and disposal procedures, as relevant for each hazardous material or hazardous waste (29 CFR 1910.120).
- Preparedness, prevention, contingency, and emergency procedures, including emergency contact information (29 CFR 1910.38).
- A description of personnel training including, but not limited to: (1) recognition of existing or potential hazards resulting from accidental spills or other releases; (2) implementation of evacuation, notification, and other emergency response procedures; and (3) management, awareness, and handling of

hazardous materials and hazardous wastes, as required by their level of responsibility (29 CFR 1910).

- Instructions on keeping Safety Data Sheets on site for each on-site hazardous chemical (29 CFR 1910.1200).
- Identification of the locations of hazardous material storage areas, including temporary storage areas, which shall be equipped with secondary containment sufficient in size to contain the volume of the largest container or tank (29 CFR 1910.120).

MY HAZ-2 **Prepare Phase II ESA:** Prior to final design, a Phase II Environmental Site Investigation shall be prepared to focus on likely sources of contamination (based on completed Phase I ESA) for properties within the Project footprint for the selected design options that would be affected by excavation. Phase II activities shall consist of:

- Collection of soil, groundwater, and soil vapor samples from borings, for geologic and environmental analysis and collection/submittal of samples to an environmental laboratory for implementation of an analytical program. Sampling shall be based on the findings of the Phase I ESA for the Project area.
- Laboratory analysis of samples for contaminants of concern, which vary by location, but may include VOCs, PAHs, total petroleum hydrocarbons (TPH), polychlorinated biphenyls, and CCR Title 22 metals.

A Phase II ESA Report shall be prepared that summarizes the results of the drilling and sampling activities, and provides recommendations based on the investigation's findings. Metro shall implement the Phase II ESA recommendations. The Phase II ESA shall be conducted under the direct supervision of a Professional Geologist, licensed in the State of California, with expertise in ESAs and evaluation of contaminated sites.

MY HAZ-3 **Prepare a General Construction Soil Management Plan:** Prior to construction, the contractor shall prepare a General Construction Soil Management Plan that includes general provisions for how soils will be managed within the Project footprint for the selected design options for the duration of construction. Any soil imported to the Project site for backfill shall be certified clean per DTSC's *Information Advisory-Clean Imported Fill Material* prior to use. General soil management controls to be implemented by the contractor and the following topics shall be addressed within the Soil Management Plan:

- General worker health and safety procedures;
- Dust control;
- Management of soil stockpiles;

- Traffic control; and
- Stormwater erosion control using BMPs.

MY HAZ-4 **Prepare Parcel-Specific Soil Management Plans and Health and Safety Plans (HASP):** Prior to construction, the contractor shall prepare parcel-specific Soil Management Plans for known contaminated sites for submittal and approval by DTSC. The plans shall include specific hazards and provisions for how soils will be managed for known contaminated sites. The nature and extent of contamination is expected to vary widely across the Project footprint for the selected design options, and the findings of a Phase II ESA will provide additional details on what is expected to be encountered during construction. The parcel-specific Soil Management Plan shall provide parcel-specific requirements addressing the following:

- Soil disposal protocols;
- Protocols governing the discovery of unknown contaminants; and
- Management of soil on properties within the Project footprint of the selected design options with known contaminants.

Prior to construction on individual properties with known contaminants, parcel-specific HASPs shall also be prepared by contractors undertaking work activities to be submitted to and approved by DTSC. The HASPs shall be prepared to meet OSHA requirements, Title 29 of the CFR 1910.120 and CCR Title 8, Section 5192, and all applicable federal, state, and local regulations and agency ordinances related to the management, transport, and disposal of contaminated media during implementation of work and field activities. The HASPs shall be signed and sealed by a Certified Industrial Hygienist, licensed by the American Board of Industrial Hygiene. In addition to general construction soil management plan provisions, the following parcel-specific HASP provisions shall also be implemented:

- Training requirements for site workers who may be handling contaminated material.
- Chemical exposure hazards in soil, groundwater, or soil vapor that are known to be present on a property.
- Mitigation and monitoring measures that are protective of site worker and public health and safety.

Prior to construction, Metro or BNSF shall coordinate soil management measures and reporting activities with stakeholders and regulatory agencies with jurisdiction, to establish an appropriate monitoring and reporting program that meets all federal, state, and local laws for the Project and each of the contaminated sites.

MY HAZ-5 **Halt Construction Work if Potentially Hazardous Materials are Encountered:** Contractors shall stop work and follow procedures outlined in the HMMP and soil management plans immediately upon discovery if potentially hazardous materials are encountered. Contractors shall follow all applicable local, state, and federal regulations regarding discovery, notification, response, disposal, and remediation for hazardous materials, underground storage tanks, and ACM (e.g., transit pipes) encountered during the construction process.

MY HAZ-6 **Pre-Demolition Investigation:** Prior to the demolition of any structures, a survey shall be conducted for the presence of hazardous building materials, such as ACMs, LBPs, and other materials falling under the Universal Waste requirements. An asbestos survey report signed by a Certified Asbestos Consultant will be prepared prior to any demolition or renovation in accordance with Rule 1403 (d)(1)(A) of the SCAQMD. The results of this survey shall be submitted to Metro, and applicable stakeholders as deemed appropriate by Metro, and submitted with an application for a Rule 1403 permit. If any hazardous building materials are discovered, prior to demolition of any structures, a plan for proper removal shall be prepared in accordance with applicable OSHA and the Los Angeles County Department of Public Health requirements. The contractor performing the work shall be required to implement the removal plan and shall be required to have a C-21 license in the State of California and possess an A or B classification. If asbestos-related work is required, the contractor or their subcontractor shall be required to possess a California Contractor License (Asbestos Certification). Prior to any demolition activities, the contractor shall be required to secure the site and ensure the disconnection of utilities.

3.11 Public Utilities and Energy

This section provides an evaluation of potential effects related to public utilities and energy resources, including water supply, delivery, and treatment facilities; drainage systems; and solid waste disposal facilities that may result upon implementation of the Malabar Yard railroad improvements.

3.11.1 Regulatory Framework

Table 3.11-1 identifies and summarizes applicable laws, regulations, and plans relevant to public utilities and energy resources.

Table 3.11-1. Applicable Laws, Regulations, and Plans for Public Utilities and Energy

Law, Regulation, or Plan	Description
Federal	
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(4,10, and 11)*, 64 *Federal Register* 28545-28556 (1999)	These FRA procedures require the draft and final EIS to assess project alternatives with respect to state and local standards for sanitary landfill and solid waste disposal. Procedures relating to the production and consumption of energy state that an EIS "shall assess in detail any irreversible or irretrievable commitments of energy resources likely to be involved in each alternative and any potential energy conservation, especially those alternatives likely to reduce the use of petroleum or natural gas, consistent with the policy outlined in EO 12185." Procedures relating to the use of natural resources other than energy, such as water, minerals, or timber, state that an EIS "shall assess in detail any irreversible or irretrievable commitments of these resources likely to be involved in each alternative."
Code of Federal Regulations Title 40 – Protection of Environment	CFR §1502.16(e) includes provisions that an EIS shall include a discussion of the energy requirements and conservation potential of various alternatives, natural or depletable resource requirements, and conservation potential of various alternatives, along with an identification of potential mitigation measures to reduce energy consumption associated with project implementation.
Executive Order 12185 (3 Code of Federal Regulations 12185) (1979) - Conservation of Petroleum and Natural Gas	EO 12185 was signed by President Carter on December 17, 1979. The goal of EO 12185 is "to encourage additional conservation of petroleum and natural gas by recipients of Federal financial assistance."
Resource Conservation and Recovery Act (42 United States Code Section 6901 et seq.) and Environmental Protection Act (40 Code of Federal Regulations Parts 239-282) [1965]	Under RCRA, the U.S. EPA has the authority to control the generation, transportation, treatment, storage, and disposal of hazardous waste by large quantity generators (1,000 kilograms/month or more). Under the RCRA regulations, hazardous wastes must be tracked from the time of generation to the point of disposal. Additionally, all hazardous waste transporters are required to be permitted and must have an identification

Table 3.11-1. Applicable Laws, Regulations, and Plans for Public Utilities and Energy

Law, Regulation, or Plan	Description
	number. In California, the U.S. EPA has delegated RCRA enforcement to Cal/EPA, DTSC.
Corporate Average Fuel Economy standards (1975)	The latest CAFE standards require an industry-wide fleet average of approximately 49 mpg for passenger cars and light trucks in model year 2026. The new standards will increase fuel efficiency 8% annually for model years 2024–2025 and 10% annually for model year 2026. They will also increase the estimated fleetwide average by nearly 10 miles per gallon for model year 2026, relative to model year 2021. These standards for 2024–2026 will reduce fuel use by more than 200 billion gallons through 2050 as compared to the old standards.
Norman Y. Mineta Research and Special Programs Improvement Act (Public Law 108-426) [November 30, 2004]	Established the Pipeline and Hazardous Materials Safety Administration in the Department of Transportation to 1) coordinate, facilitate, and review DOT research and develop programs and activities; 2) advance innovative technologies; 3) provide comprehensive transportation statistics, analysis, and reporting; 4) provide education and training in transportation and transportation-related fields; and 5) coordinate and facilitate activities of the Volpe National Transportation Center.
Section 403(b) of the Power Plant and Industrial Fuel Act (Executive Order 12185) [1978]	Provides that no new baseload electric power plant may be constructed or operated without the capability to use coal or another alternate fuel as a primary energy source. In order to meet the requirement of coal capability, the owner or operator of such facilities proposing to use natural gas or petroleum as its primary energy source shall certify, pursuant to Fuel Use Act Section 201(d), and Section 501.60(a)(2) of DOE's regulations to the Secretary of Energy prior to construction, or prior to operation as a base load power plant, that such powerplant has the capability to use coal or another alternate fuel.
Conservation of Petroleum and Natural Gas, 44 Federal Register Section 75093; Public Law 95-620) [December 17, 1979]	Encourages conservation of petroleum and natural gas by recipients of Federal financial assistance.
State	
California Code of Regulations, Title 27, Environmental Protection – Division 2, Solid Waste	Division 2 of CCR Title 27 regulates the treatment, storage, processing, and disposal of solid waste. The code is intended to promote the health, safety and welfare of the people of the State of California, and to protect the environment by establishing minimum standards for the handling and disposal of solid wastes at disposal sites.
California Code of Regulations, Title 24, Part 11, Green Building Standards Code	CALGreen is the nation's first mandatory green building standards code. CALGreen regulates the sustainability standards to which nonresidential structures are designed and constructed. Specifically, CALGreen encompasses five areas, which include planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality.

Table 3.11-1. Applicable Laws, Regulations, and Plans for Public Utilities and Energy

Law, Regulation, or Plan	Description
California Code of Regulations Section 4216 – Excavation Law (revised January 1, 2020)	Section 4216 of the CCR requires that an excavator notify the applicable regional notification center (i.e., Underground Service Alert) at least two days before excavation of any subsurface utility installations.
California Public Utilities Commission, Section 10001 through 1013	Sections 1001–1013 of the Public Utilities Code requires that railroad companies operating railroads that are powered by electric energy, or, electric companies operating power lines, will not begin construction of electric railroads or power lines without first obtaining a certificate from CPUC showing that the present or future public convenience and necessity require or will require such construction.
Solid Waste Reuse and Recycling Act (Public Resources Code 42900) [1991]	The Solid Waste Reuse and Recycling Act of 1991 was enacted to assist local jurisdictions with accomplishing the goals of AB 939. In accordance with AB 2176, any development project that has submitted an application for a building permit must include adequate, accessible areas for the collection and loading of recyclable materials. In addition, the areas to be utilized must be adequate in capacity, number, and distribution to serve the project. Moreover, the collection areas are to be located as close to existing exterior refuse collection areas as possible.
Assembly Bill 2514 [September 29, 2010]	AB 2514 (Public Utilities Code 2835 et seq.), the energy storage law in California, requires the governing board of each Publicly Owned Utility to "determine appropriate targets, if any, for the utility to procure viable and cost-effective energy storage systems …" The CEC was given the responsibility to review the procurement targets and policies that are developed and adopted by the Publicly Owned Utilities to ensure that the targets and policies include the procurement of cost-effective and viable energy storage systems.
Senate Bill 1374, Chapter 501 (2002)	C&D waste can be a significant portion of a jurisdiction's waste stream and diverting it from landfills can help jurisdictions achieve and maintain their diversion goals established by AB 939. SB 1374 (Kuehl, Chapter 501, Statutes of 2002) directed the California Integrated Waste Management Board (now the Department of Resources Recycling and Recovery, or CalRecycle) to provide information to jurisdictions and general contractors on methods and activities to divert C&D materials. This bill also directed CalRecycle to develop and adopt a model C&D diversion ordinance for voluntary use by local jurisdictions.
Local	
City of Vernon Waste Management Plan for Construction and Demolition	The City of Vernon ordinance requires covered project proponents to submit a WMP to the WMP Compliance Official. The WMP is required to include the estimated volume or weight of project C&D debris, by material type, to be generated, as well as the facility that would receive the material. Project proponents must provide documentation to the WMP Compliance Official documenting the project has met the diversion requirements.

Table 3.11-1. Applicable Laws, Regulations, and Plans for Public Utilities and Energy

Law, Regulation, or Plan	Description
City of Vernon Urban Water Management Plan (2020)	UWMPs are prepared by urban water suppliers every five years to support long-term water resource management. The City of Vernon's 2020 UWMP is an update to the 2015 UWMP. The goal of the plan is to ensure that California water supply is not vulnerable due to a lack of long-term resource planning.
City of Vernon Public Utilities – Integrated Resource Plan (2018)	In accordance with AB 2514, VPU completed its IRP in November of 2018. The IRP analysis included an evaluation of energy storage. The IRP includes an energy storage evaluation to plan for forecasted energy demand, promote energy efficiency, and meet regulatory requirements.
City of Vernon Storm Sewer System Ordinance	Pursuant to the Federal Water Pollution Control Act, the purpose and intent of the Storm Sewer System Ordinance (contained in Chapter 13.24 of the City of Vernon's Municipal Code) is to enhance and protect the water quality of the receiving waters of the U.S. that is consistent with the CWA and apply implementing regulations such as the municipal NPDES permit. In addition, this ordinance is intended to protect and control the City's sanitary sewer system and to reduce stormwater and urban runoff pollutants by improving the quality of stormwater that are discharged into the regional stormwater system within Los Angeles County.

Notes:
AB=Assembly Bill; C&D=Construction and Demolition; CAFE= Corporate Average Fuel Economy; Cal/EPA=California Environmental Protection Agency; CALGreen=California Green Building Standards Code; CEC=California Energy Commission; CCR=California Code of Regulations; CPUC= California Public Utilities Commission; CWA=Clean Water Act; EIS=environmental impact study; EO=Executive Order; IRP=Integrated Resource Plan; mpg=miles per gallon; NPDES=National Pollutant Discharge Elimination System; RCRA=Resource Conservation and Recovery Act; SB=Senate Bill; UWMP=Urban Water Management Plan; U.S. EPA=United States Environmental Protection Agency; VPU=Vernon Public Utilities; WMP=Waste Management Plan

3.11.2 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the Malabar Yard railroad improvements would affect:[1]

- Water supply and infrastructure;
- Drainage capacity and infrastructure;
- Solid waste collection and landfill capacity;
- Telecommunications infrastructure; and/or

[1] Effects on cultural resources resulting from subsurface utility work during construction is considered and evaluated in Section 3.12 of this document. In addition, effects relative to demolition of older buildings that could generate hazardous waste, such as asbestos-containing materials (ACMs) and lead-based paint is addressed in Section 3.10 of this document.

- Energy demand, infrastructure, and compliance with initiatives for renewable energy or energy efficiency.

Geographic Area Considered

The Malabar Yard study area is used to characterize the affected environment and the Project footprint for the design options considered for the Malabar Yard railroad improvements is the geographic area considered to determine potential effects related to public utilities and energy.

Methodology

Effects are assessed locally for physical infrastructure conflicts and regionally for potential effects relative to existing utility and energy capacity and forecasts of available supplies.

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects for each of the topics considered is presented below.

Utilities

A desktop-level assessment using publicly available data was performed to determine the type, size, and location of utility infrastructure, including the existing electrical, gas, water, drainage, and telecommunications infrastructure in the Malabar Yard study area. Utility owners were also contacted to obtain system maps/as-built plans. The requested material was used to support plan development, research efforts, and future utility coordination efforts. Existing capacities and forecast demand of available supplies were compared to the anticipated demand of the Malabar Yard railroad improvements to determine the severity of potential effects on existing utility providers. Potential utility conflicts were identified where proposed infrastructure associated with the Malabar Yard railroad improvements requires the expansion or relocation of existing utilities (refer to engineering plans provided as Appendices A and B to this document for more details). Project-related effects would be considered adverse if the Malabar Yard railroad improvements results in prolonged utility interruptions.

Solid Waste

A review of the City of Vernon and CalRecycle websites identified the solid waste facilities serving the Malabar Yard study area. This included a review of permitted landfill capacity, remaining capacity, and closure dates. Project-related effects would be considered adverse if the solid waste generated by the Malabar Yard railroad improvements could not be accommodated by an existing landfill due to remaining landfill capacity or if the landfill is expected to be closed and cannot intake solid waste.

Energy

To determine potential effects on energy resources during construction, fuel and energy usage were considered based on construction data utilized for the air quality (Section 3.5, Air Quality

and Global Climate Change). For operations, a qualitative evaluation was performed to determine if there would be any long-term change in energy use from Malabar Yard railroad improvements and if the implementation of Malabar Yard railroad improvements aligns with initiatives for renewable energy and/or energy efficiency. Project-related effects would be considered adverse if there would be any long-term change in energy use, wasteful, inefficient, and unnecessary consumption of energy during construction or operation, or if the railroad improvements conflict with applicable laws and regulations for renewable energy and/or energy efficiency discussed above in the regulatory section.

3.11.3 Affected Environment

This section describes water, drainage, solid waste, telecommunication, and energy for the existing conditions.

Water

Water service for the Malabar Yard study area is provided by the City of Vernon Water Department, which serves more than 1,000 customers and distributes approximately 2.8 billion gallons of water annually. The City of Vernon Water Department infrastructure includes 243,624 linear feet of pipe, 8 wells, 6 ground-level reservoirs, 1 elevated tank, and 1 belowground reservoir, and has a total storage capacity of 16.7 million gallons (City of Vernon 2020). The Metropolitan Water District also provides a supplemental source and emergency supply of water to the City of Vernon.

The City of Vernon has an adopted Urban Water Management Plan (UWMP) that ensures availability of adequate water supplies (City of Vernon 2020). With its current water supplies, planned future water conservation, and planned future water supplies, the City of Vernon projects reliable water supply to its customers through 2045, the period covered by its 2020 UWMP, including for single-dry-year and multiple-dry-year conditions (City of Vernon 2020). Water demands are projected to total 10,860 acre-feet in 2045 (City of Vernon 2020).

Known water infrastructure along affected roadways include an 8-inch water pipeline under 49th Street, and an existing 8-inch water pipeline under 46th Street and Seville Avenue (refer to engineering plans provided as Appendices A and B [Sheets 7 and 8, respectively] to this document for more details). No recycled water infrastructure is located within the Malabar Yard study area. Water in the City of Vernon is obtained from existing, permitted sources, which include groundwater from the Central Basin, imported water from the Central Basin Municipal Water District, and recycled water (City of Vernon 2020).

Drainage

Stormwater runoff in in the City of Vernon is conveyed through local and Los Angeles County Flood Control District storm drainage systems (City of Vernon 2015). The City of Vernon and Los Angeles County Flood Control District maintain storm drain systems in the Malabar Yard study area. Existing drainage infrastructure and storm water pipelines are located along 49th Street,

46th Street, Pacific Boulevard, and Seville Avenue (refer to engineering plans provided as Appendices A and B [Sheets 7 through 10, respectively] to this document for more details).

Solid Waste

The City of Vernon Health Department is responsible for solid waste management within the city. Non-recyclable materials are transferred to the Sunshine Canyon Landfill, located just north of the City of Los Angeles. The Sunshine Canyon Landfill is located on 1,036 acres and has a waste disposal area of 363 acres. The landfill accepts approximately 9,000 tons of waste daily. According to CalRecycle, the remaining landfill capacity is 77,900,000 cubic yards, and the anticipated closure date is 2037 (CalRecycle 2018). Permitted waste types at the landfill include construction and demolition (C&D) waste, green materials, household trash, industrial non-hazardous waste, and inert waste.

Telecommunications

Telecommunications services and infrastructure within the County, including within the City of Vernon, are predominantly provided by the following publicly traded telecommunications companies:

- AT&T;
- Charter Communications;
- DirecTV;
- Dish Network;
- Frontier Communications;
- Verizon;
- Sprint;
- Quest;
- WU; and
- Zayo.

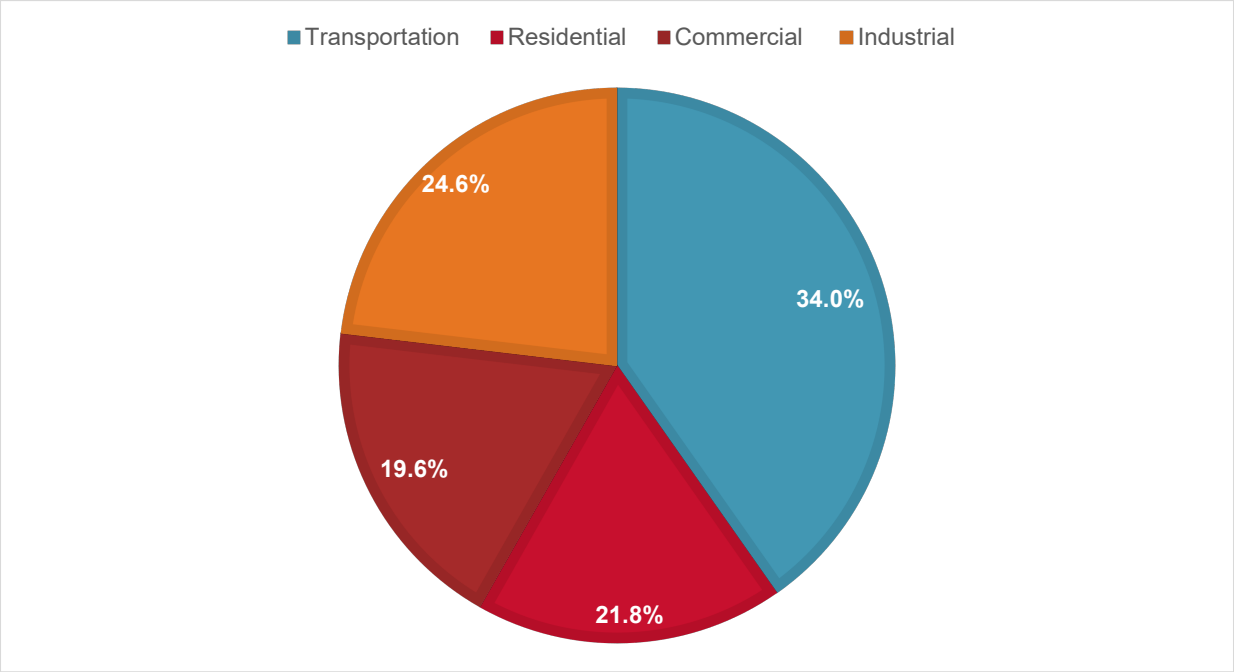
Existing telecommunications infrastructure in the Malabar Yard study area includes an overhead telephone (AT&T) line on 49th Street, overhead fiber optic cable on 49th Street, and three overhead communication lines on 46th Street and Seville Avenue (refer to engineering plans provided as Appendices A and B [Sheets 7 and 8, respectively] to this document for more details).

Energy

According to the Energy Information Administration (EIA), California, although one of the largest states, has one of the lowest per capita total energy consumption levels in the country (EIA 2022). According to the EIA, California's transportation sector energy consumption totaled approximately 2,355 trillion British thermal units (btu) in 2020, while residential sector, commercial sector, and

industrial sector consumption totaled approximately 1,508 trillion btu, 1,701 trillion btu, and 1,358 trillion btu, respectively (EIA 2021). Figure 3.11-1 shows the relative proportion of energy consumption by sector.

Figure 3.11-1. Energy Consumption in California by End-Use Sector in 2020



Source: EIA 2021

California's electricity is generated from a variety of sources, including natural gas, nuclear power, hydroelectric power, wind energy, solar, and coal. Table 3.11-2 shows California's net electricity generation by energy source for 2021 (CEC 2022).

Table 3.11-2. California's Electricity Generation by Energy Source (Gigawatt hours)

Energy Source	2021
Hydroelectric	14,566
Nuclear	16,477
Coal	303
Oil	39
Natural Gas	97,350
Geothermal	11,116
Biomass	5,439

Table 3.11-2. California's Electricity Generation by Energy Source (Gigawatt hours)

Energy Source	2021
Wind	14,216
Solar Photovoltaic	31,614
Solar Thermal	2,065
Petroleum Coke	204
Waste Heat	178
Total In-State Generation	***193,569***
Net Imports	83,636
Total System Electric Generation	**277,205**

Source: CEC 2022

Electricity

Electricity is provided by Vernon Public Utilities (VPU), which serves about 2,000 mainly commercial and industrial customers with electric sales of approximately 1,128 gigawatt hours annually (VPU 2018). In accordance with AB 2514 (Public Utilities Code 2835 et seq.), VPU completed its Integrated Resource Plan (IRP) in November 2018. The IRP includes an energy storage evaluation to plan for forecast energy demand, promote energy efficiency, and meet regulatory requirements.

Electricity is supplied to the City by five 66-kilovolt distribution lines that connect the VPU system to the California Independent System Operator system at the Southern California Edison Laguna Bell 220/66 kilovolt Substation (VPU 2018). Peak Load, defined as the time with the greatest demand for electricity, in the VPU service area is served in part by two generation facilities that are located within VPU service territory. The Malberg Generating Station is a 134-megawatt natural gas-fired plant, and the H. Gonzales Generation Plant has two natural gas plant units, which have a combined generation of 10 megawatts. In addition to the local generation, VPU purchases energy to supply its 184-megawatt system demand from long-term agreements from the Palo Verde Nuclear Generating Station, Hoover Dam, solar generating facilities, landfill gas facilities, and from short-term power purchases (VPU 2018).

Existing overhead electric infrastructure is located along 49th Street, 46th Street, Pacific Boulevard, and Seville Avenue (refer to engineering plans provided as Appendices A and B [Sheets 7 and 8, respectively] to this document for more details).

Natural Gas

The Malabar Yard study area is served by Southern California Gas Company for natural gas; however, there are no high-pressure distribution or transmission natural gas lines within the Malabar Yard study area (SoCalGas 2020). A 2-inch and 6-inch gas pipeline are located on 49th Street, 6-inch gas pipelines are located along 46th Street and Seville Avenue, and steel-encased gas lines are located near the railroad spur track located south of 46th Street between Pacific Boulevard and Seville Avenue (refer to engineering plans provided as Appendices A and B [Sheets 7 and 8, respectively] to this document for more details).

3.11.4 Environmental Consequences

No Action Evaluation

The following topics were evaluated to determine potential effects if the Malabar Yard railroad improvements in the City of Vernon were not implemented in conjunction with the Build Alternative.

Water Supply and Infrastructure

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects associated with water supply and infrastructure would occur. Construction would not occur and water infrastructure within the Malabar Yard study area would not be impacted.

Drainage Capacity and Infrastructure

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects associated with drainage capacity and infrastructure would occur because existing drainage patterns and stormwater infrastructure would remain in its existing condition.

Solid Waste Collection and Landfill Capacity

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects associated with solid waste collection and landfill capacity would occur because C&D waste would not be generated.

Telecommunications Infrastructure

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects associated with telecommunications infrastructure would occur. Existing telecommunications infrastructure would remain in its existing condition and service within the Malabar Yard study area would not be interrupted.

Energy Demand, Infrastructure, and Compliance with Initiatives for Renewable Energy or Energy Efficiency

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects associated with energy demand, infrastructure, or conflict with initiatives for renewable energy or energy efficiency are anticipated to occur.

Evaluation of Malabar Yard Railroad Improvements

TOPIC 3.11-A	Water supply and infrastructure

Direct Effects – Construction

Water would be required for construction activities such as controlling dust, compacting soil, and mixing concrete. The following water demand estimates were developed for each of the Malabar Yard railroad improvements, assuming an 18-month schedule:

- 49th Street Closure:
  - Estimated Water Use: 133,363 gallons.
  - Average Usage: 342 gallons per day.
- 46th Street Connector:
  - Estimated Water Use: 473,310 gallons.
  - Average Usage: 1,214 gallons per day.

Known potable water infrastructure within the Malabar Yard study area includes an 8-inch water pipeline under 49th Street and an existing 8-inch water pipeline under 46th Street and Seville Avenue. Water required for construction activities would be obtained from existing, permitted sources from groundwater from the Central Basin or imported water from the Central Basin Municipal Water District via on-site water infrastructure. According to the City's 2020 UWMP, adequate water supplies are currently available from existing water suppliers in the region and ensures reliable water supply to the service area through the year 2045 (City of Vernon 2020). Based on the anticipated water demand of 606,673 gallons (or 1.86 acre-feet) over 18 months, and in the context of the supplies available to the City of Vernon (10,860 acre-feet per year), water demand for construction of the Malabar Yard railroad improvements would represent a nominal percentage (0.017 percent) of the city's available supply from 2025 through 2045.

Temporary shutdown of water utility lines may result in temporary service disruptions to the City of Vernon Water Department's. Construction-related disruptions to utility service providers, including the City of Vernon Water Department, would be coordinated with the respective utility providers in advance to minimize interruptions to the greatest extent feasible or, if feasible, to avoid interruptions altogether.

Although impacts to water conveyance infrastructure would occur, they would be intermittent and temporary in nature. No direct adverse effect would occur.

Direct Effects – Operations

The Malabar Yard railroad improvements would facilitate storage of trains at the Malabar Yard and a connection of two existing spur lines for freight trains to access the Los Angeles Junction. No new land uses are proposed, and operation of the Malabar Yard railroad improvements would not change existing water use in the Malabar Yard study area. No direct adverse effect would occur.

Indirect Effects

The Malabar Yard railroad improvements would not result in indirect effects with respect to availability of water supplies because water demand from construction or operation of the Malabar Yard railroad improvements would not exceed forecast demand of the City of Vernon (2020). No indirect adverse effect would occur.

TOPIC 3.11-B	Drainage capacity and infrastructure

Direct Effects – Construction

As summarized in Section 3.8, Floodplains, Hydrology, and Water Quality, runoff from the Malabar Yard study area is discharged to various storm drain systems connected to Los Angeles County Flood Control District inlets that drain to the Los Angeles River. Construction activities may require temporary redirection of stormwater runoff to other stormwater drainage infrastructure within the Los Angeles County Flood Control District's service area. If stormwater drains need to be relocated during construction, all utility interruptions, removals, and relocations would be coordinated with Los Angeles County Flood Control District in order to minimize and, if feasible, avoid construction-related impacts to the storm drain system.

As described in Section 3.8, Floodplains, Hydrology, and Water Quality, the Malabar Yard railroad improvements would require grading and excavation which could have direct impacts on prevailing drainage patterns and the rate and volume of stormwater runoff entering the public storm drain system. Although the grading and excavation would be minimal due to the existing grade of the Project footprint for the design options considered and extent of proposed improvements, construction-related changes in drainage patterns, including changes to the volume and rate of runoff, may result in exceedances of the capacity of existing storm drains and stormwater facilities serving the area. Effects could be adverse if not properly managed.

Implementation of Malabar Yard Mitigation Measure HWQ-1 (described in Section 3.8, Floodplains, Hydrology, and Water Quality) requires the preparation and implementation of an SWPPP by a Qualified SWPPP Developer. The SWPPP will include construction site BMPs to reduce the volume and velocity of stormwater runoff. Construction site BMPs designed for soil stabilization and sediment control, including, but not limited to, temporary measures such as stabilized construction entrances/exits, a move in/move out, silt fences, hydraulic mulch, concrete washouts, fiber rolls, and inlet protection measures, required as part of the SWPPP would actively control sediments and stormwater discharges to the public storm drain system during construction

of the Malabar Yard railroad improvements. Upon implementation of Malabar Yard Mitigation Measure HWQ-1, no direct adverse effect would occur.

Direct Effects – Operations

Where possible, existing storm drains would be protected-in-place through the use of casings, concrete blankets, or other industry-approved structural protection methods. For any combination of design options at both locations, impervious surface would not be added where pervious surface currently exists in the existing condition. Along 46th Street, the impervious surface would decrease due to installation of new ballast along the new 46th Street connector railroad ROW. At 49th Street, no changes to the impervious surface area would occur. A summary of the affected areas is discussed below:

- **46th Street:** For Design Option 1 at 46th Street, approximately 250,000 square feet of impervious surface would be reconstructed with new ballasted trackbed. For Design Option 2 at 46th Street, approximately 230,000 square feet of impervious surface would be reconstructed with new ballasted trackbed.
- **49th Street:** For Design Option 1 at 49th Street, approximately 80,000 square feet of impervious surface would be reconstructed, all of which is already impervious. For Design Option 2 at 49th Street, approximately 85,000 square feet of impervious surface would be reconstructed, all of which is already impervious.

In areas where existing impervious surfaces would be replaced with pervious ballasted trackbed, drainage could be affected in a manner that could change the rate of stormwater runoff entering the public storm drain system. This is considered an adverse effect. Implementation of Malabar Yard Mitigation Measure HWQ-5 (described in Section 3.8, Floodplains, Hydrology, and Water Quality) would avoid or minimize the potential for adverse effects on drainage capacity and infrastructure through compliance with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles County and through preparation of a LID report that complies with City of Vernon's *Low Impact Development Guidance Manual*. The primary goal of NPDES permits is through the use of LID, which is a stormwater management strategy designed to retain stormwater runoff on site by minimizing soil compaction and impervious surfaces. Upon implementation of Malabar Yard Mitigation Measure HWQ-5, no direct adverse effect would occur during operation.

Indirect Effects – Construction and Operations

As described above, construction and operation of any combination of design options for the Malabar Yard railroad improvements may result in potential alteration of drainage patterns and the rate of stormwater runoff entering the public storm drain system. These potential alterations could indirectly affect water quality and existing drainage route connections within the Malabar Yard study area and surrounding areas. Potential effects could be adverse if not properly managed. The Malabar Yard railroad improvements would be constructed in accordance with NPDES requirements, standard engineering practices including the 2019 CBC and compliance

to the City's Municipal Code, NPDES Waste Discharge Requirements, and the City's *Low Impact Development Guidance Manual*. As described above, implementation of Malabar Yard Mitigation Measures HWQ-1 and HWQ-5 would require preparation and implementation of a SWPPP and a LID report. The site construction BMPs outlined in the SWPPP would reduce the volume and velocity of stormwater runoff during construction. Incorporation of LID stormwater management strategies throughout operations would facilitate retention of stormwater runoff on site by minimizing soil compaction and impervious surfaces. Therefore, implementation and compliance with these regulations and guidance will provide adequate drainage capacity during construction and operation and proper functioning drainage infrastructure after construction is complete and no indirect effects related to exceeding drainage capacity of existing or planned storm water drainage infrastructure are anticipated. Upon implementation of Malabar Yard Mitigation Measures HWQ-1 and HWQ-5, no indirect adverse effect would occur.

TOPIC 3.11-C	Solid waste collection and landfill capacity

Direct Effects – Construction

Construction of the Malabar Yard railroad improvements would generate construction waste from the removal of existing infrastructure (roadways, trackwork, concrete, etc.). During construction, concrete, brick, asphalt, railway basalt, and other construction waste would be generated. For the 46th Street Connector, Design Option 2 would generate less construction waste than Design Option 1 because Design Option 2 would include less demolition of buildings.

For any combination of design options at both locations, a minimal amount of waste is expected to be generated during construction due to the nature of the railroad improvements. Waste would be minimized through reuse and recycling, and the solid waste generated during construction would not substantially affect capacity at an existing landfill. As standard construction practice, the contractor would be required to segregate these materials prior to disposal at a certified recycling facility where materials would be properly recycled or reused. Additionally, the contractor would be required to adhere to federal, state, and local regulations for solid waste disposal, such as Senate Bill (SB) 1374 and the City of Vernon Waste Management Plan (WMP) for C&D. The Malabar Yard railroad improvements would be constructed in compliance with these regulations and diversion strategies are expected to be implemented by the contractor during each phase of construction. Non-recyclable materials would be transferred to the Sunshine Canyon Landfill, which has a remaining capacity of 77,900,000 cubic yards of the facility's maximum 140,900,000 cubic yard capacity (CALRecycle 2018) and would have sufficient capacity to accommodate waste generated during construction of the Malabar Yard railroad improvements. No direct adverse effect would occur.

Direct Effects – Operations

Proposed infrastructure associated with the Malabar Yard railroad improvements would not generate a substantial amount of solid waste throughout operations. No habitable structures are proposed and the need for increased solid waste disposal is not anticipated. Solid waste that could accumulate within the newly established ROW would typically include industrial waste (such

as paper, cardboard, and plastics) and other debris that would be disposed of by BNSF during ongoing maintenance activities that are already underway within the City. Disposal of solid waste would occur in a similar fashion as under existing conditions and in accordance with applicable federal, state, and local regulations for solid waste disposal. As standard practice during ongoing operations, materials would be segregated prior to disposal at a certified recycling facility. Additionally, the existing landfill capacity through the 2037 horizon year would be adequate for the minimal amount of solid waste generated from the newly established railroad ROW. No direct adverse effect would occur.

Indirect Effects – Construction and Operations

Implementation of the Malabar Yard railroad improvements is related to movement of freight and not passenger rail. Construction of the Malabar Yard railroad improvements would not cause indirect adverse effects related to solid waste and landfill capacity. After construction of the Malabar Yard railroad improvements, it is not anticipated that any additional solid waste would be generated. The Malabar Yard railroad improvements would not result in indirect effects relative to solid waste during construction or operations. No indirect adverse effect would occur.

TOPIC 3.11-D	Telecommunications infrastructure

Direct Effects – Construction

Existing telecommunication infrastructure within the Malabar Yard study area is located underground or overhead and is generally co-located on poles with electrical lines. During construction of the Malabar Yard railroad improvements, existing telecommunications infrastructure would be protected in place to the greatest extent feasible. Any disruptions of telecommunication service would be temporary and minimized to the maximum extent practical through coordination with the respective telecommunication providers. Additional coordination with telecommunication providers would be required during final engineering design to avoid and/or minimize potential conflicts during construction. No direct adverse effect would occur.

Direct Effects – Operations

Long-term operation of the Malabar Yard railroad improvements would not impact telecommunication infrastructure because telecommunication lines would be buried under access roads, placed within utility tunnels, or left overhead to protect the facilities and provide for future maintenance. No direct adverse effect would occur.

Indirect Effects – Construction and Operations

Implementation of the Malabar Yard railroad improvements is related to movement of freight and not passenger rail. The Malabar Yard railroad improvements will not cause increased demand on telecommunications when compared to existing conditions; therefore, no indirect adverse effect would occur.

TOPIC 3.11-E	Energy demand, infrastructure, and compliance with initiatives for renewable energy or energy efficiency

Direct Effects – Construction

During construction of the Malabar Yard railroad improvements, consumption of energy would occur in two general forms: fuel energy consumed by construction vehicles and other equipment, and bound energy used in the manufacturing and processing of construction materials such as steel, concrete, pipes, lumber, and glass. Energy in the form of fuels used for construction vehicles and other equipment would be used during site excavation, grading and all other construction-related activities, including transporting construction materials and supporting staging area, field offices and security lighting. The Malabar Yard railroad improvements would require 11,164 gallons of gasoline and 209,537 gallons of diesel in total. Section 3.5, Air Quality and Greenhouse Gas includes details of the air quality impacts associated with operating construction equipment. From a construction perspective, the use of diesel and gasoline for construction is comparable to other urban construction projects, would be temporary in nature, and would not represent a substantial, permanent, or unnecessary use of energy.

Sufficient supplies of gas and electricity are available to construct the Malabar Yard railroad improvements and no new facilities or expansion of existing facilities would be required. Construction would result in conflicts with existing utilities, stemming from existing buried utility lines (gas lines and electrical lines) and existing aboveground or overhead transmission lines.

Existing utility services would be maintained throughout construction by relocating facilities into access roads and utility tunnels to protect the facilities during construction and to provide for increased efficiency for future maintenance activities. Modifications to utility infrastructure would be limited to relocations and no new substations would be required to construct the Malabar Yard railroad improvements. However, any necessary undergrounding and/or trenching activities involved would not result in substantial disruptions or affect the service of existing infrastructure as all services would be maintained throughout the construction period. Additionally, utility service conflicts would be temporary and minimized to the maximum extent feasible through coordination with public utility providers. Energy use would increase temporarily during construction, but a substantial demand on regional energy supply and new infrastructure would not be required. No direct adverse effect would occur.

Direct Effects – Operations

Operation of the Malabar Yard railroad improvements would efficiently utilize energy resources and would not conflict with initiatives for renewable energy or result in use of energy in an inefficient manner. Electricity would be required throughout operations to provide lighting along the track alignment for safety purposes.

The Malabar Yard railroad improvements are not expected to require construction of new gas or electric facilities or expansion of existing facilities. Further, as described in Section 3.2, Land Use and Planning, the Malabar Yard railroad improvements are consistent with the plans and policies

relative to expansion of transportation options and increased rail service and reducing energy demand by taking truck trips off the road. Operation of the Malabar Yard railroad improvements would not result in unnecessary consumption of energy resources or conflict with initiatives for renewable energy or energy efficiency. No direct adverse effect would occur.

Indirect Effects – Construction and Operations

The Malabar Yard railroad improvements would accommodate current and anticipated future increases in rail/freight for the region, resulting in an indirect beneficial effect on energy resources. Because the Malabar Yard railroad improvements would provide storage space for displaced intermodal railcars, it would provide a shorter, direct route for BNSF trains to travel between Malabar yard and LAUS, thereby reducing train miles and long-haul trucking. This would reduce gasoline and diesel fuel consumption, thereby resulting in desirable energy benefits. Implementation of the railroad improvements would aid in the reduction of GHG emissions through regional VMT reductions. A beneficial effect would occur.

3.11.5 Mitigation Measures

Implementation of the following mitigation measures would avoid or minimize potential adverse effects on public utilities and energy. Mitigation measures for the Malabar Yard railroad improvements include “MY” in the nomenclature as shown below.

MY HWQ-1 **Prepare and Implement a SWPPP for the Malabar Yard Railroad Improvements.** See Section 3.8, Floodplains, Hydrology, and Water Quality.

MY HWQ-5 **Final Water Quality BMP Selection for the Malabar Yard Railroad Improvements (City of Vernon and BNSF Railroad ROW).** See Section 3.8, Floodplains, Hydrology, and Water Quality.

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3.12 Cultural and Paleontological Resources

This section provides an evaluation of potential effects to historic properties (within the portion of the of the area of potential effects [APE] in the City of Vernon) and paleontological resources that may result from the Malabar Yard railroad improvements. While the California State Historic Preservation Officer (SHPO) has commented on the APE and concurred with the identification, evaluation, and assessment of effects for cultural resources identified within the APE, mitigation measures for historic properties presented in this chapter are still pending SHPO concurrence, which is expected in May 2024.

The information about cultural resources contained in this section is summarized from the *Link US Supplemental Cultural Resource Report* (December 2020) and *Link US Finding of Effect Report* (August 2023) (Appendix M of this document).

3.12.1 Regulatory Framework

Table 3.12-1 identifies and summarizes applicable laws, regulations, and plans relative to cultural and paleontological resources.

Table 3.12-1. Applicable Laws, Regulations, and Plans for Cultural and Paleontological Resources

Law or Regulation	Description
Federal	
National Environmental Policy Act (42 United States Code Section 4321 et seq.)	NEPA, as amended, establishes the federal policy of protecting important historic, cultural, and natural aspects of our national heritage during federal project planning. All federal or federally assisted projects requiring action pursuant to Section 102 of NEPA must take into account the effects on cultural resources. According to the NEPA regulations (40 CFR Part 1500 et seq.), in considering whether an action may "significantly affect the quality of the human environment," an agency must consider, among other things, unique characteristics of the geographic area such as proximity to historic or cultural resources and the degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the NRHP. The NEPA regulations also require that, to the fullest extent possible, agencies shall prepare draft EISs concurrently with and integrated with environmental impact analyses and related surveys and studies required by the NHPA. When Section 106 of the NHPA and NEPA are integrated, project impacts that cause adverse effects under Section 106 are described in the EIS/ SEIR.
Federal Railroad Administration, Procedures for Considering Environmental Impacts Sec. 14(n)(21),	These FRA procedures require the draft and final EIS/SEIR to identify any significant changes likely to occur in sites of historical, archeological, architectural, or cultural significance.

Table 3.12-1. Applicable Laws, Regulations, and Plans for Cultural and Paleontological Resources

Law or Regulation	Description
64 *Federal Register* 28545-28556 (1999) [1]	
Council for Environmental Quality 40 CFR 1502.16I [2]	The CEQ NEPA implementing regulations require a discussion of possible conflicts between the proposed action and the objectives of federal, regional, state, and local land use plans, policies, and controls for the area concerned.
National Historic Preservation Act (54 United States Code Section 300101, et seq.) including Section 106 of the National Historic Preservation Act (54 United States Code Section 306108) Implementing Regulations for Section 106 of the NHPA (36 Code of Federal Regulations 800)	Section 106 of the NHPA of 1966, as amended, established a national policy of historic preservation, and encourages such preservation. The NHPA established the Advisory Council on Historic Preservation and provides procedures for the agency to follow if a proposed action affects a property that is included, or that may be eligible for inclusion, in the NRHP. The NRHP was developed as a direct result of the NHPA. Section 106 requires that the head of any federal agency having direct or indirect jurisdiction over a proposed federal or federally assisted undertaking in any state, and the head of any federal department or independent agency having authority to license any undertaking, shall, prior to the approval of the expenditure of any federal funds on the undertaking or prior to the issuance of any license, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the NRHP.
Section 4(f) of the Department of Transportation Act (49 United States Code Section 303)	Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 USC 303, prohibits use of a publicly owned park, recreation area, wildlife or waterfowl refuge, or publicly or privately owned historic site of national, state, or local significance listed or found eligible for listing in the NRHP for a transportation project unless the Secretary of Transportation has made a finding of *de minimis* impact, or has determined that there is no feasible and prudent alternative to such use and the project includes all possible planning to minimize harm to the property resulting in such use. Collectively, the properties protected by Section 4(f) are known as "Section 4(f) resources."

[1] While this this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

[2] The CEQ issued new regulations effective April 20, 2022, updating the NEPA implementing procedures at 40 CFR Parts 1500-1508. However, because this environmental document was initiated prior to the effective date, it is not subject to the new regulations and CHSRA is relying on the regulations as they existed on the date of the initial Notice of Intent, May 31, 2016. Therefore, all citations to CEQ regulations in this environmental document refer to the 1978 regulations and the 1986 amendment, 51 *FR* 15618 (Apr. 25, 1986).

Table 3.12-1. Applicable Laws, Regulations, and Plans for Cultural and Paleontological Resources

Law or Regulation	Description
Archaeological and Historic Preservation Act (54 United States Code Sections 312501 to 312508)	This act provides for preserving significant historic or archaeological data that may otherwise be irreparably lost or destroyed by construction of a project by a federal agency or under a federally licensed activity or program. This includes relics and specimens.
American Indian Religious Freedom Act (42 United States Code Section 1996)	The American Indian Religious Freedom Act protects and preserves the traditional religious rights and cultural practices of American Indians, Eskimos, Aleuts, and Native Hawaiians. The act requires policies of all governmental agencies to respect the free exercise of native religion and to accommodate access to and use of religious sites to the extent that the use is practicable and is not inconsistent with an agency's essential functions. If a place of religious importance to American Indians may be affected by a project, the American Indian Religious Freedom Act promotes consultation with Indian religious practitioners, which may be coordinated with Section 106 consultation.
Presidential Memorandum, Government-to-Government Relations with Native American Tribal Governments, April 29, 1994	Directed to the heads of executive departments and agencies, this memorandum outlines the principles that are to be followed in interactions with the governments of federally recognized Native American tribes. It includes provisions for government-to-government relations and consultation and requires assessment of the impact of federal government plans, projects, programs, and activities on tribal trust resources and assurance that tribal government rights and concerns are considered during the development of such plans, projects, programs, and activities.
Executive Order 13175, Consultation with Indian Tribal Governments	This order establishes regular and meaningful consultation and collaboration with officials of federally recognized Indian tribes in the development of federal policies that have tribal implications, to strengthen the government-to-government relationships with Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes. It sets forth guiding principles for government-to-government relations with Indian tribes, along with criteria for formulating and implementing policies that have tribal implications.
United States Department of Transportation Tribal Consultation Plan (Order 5301.1)	In response to EO 13175, this plan states that as an executive agency, the U.S. Department of Transportation has a responsibility to, and is committed to working with, the governments of federally recognized Indian tribes in a unique relationship, respecting tribal sovereignty and self-determination. The plan identifies specific goals, including establishing direct contact with Indian tribal governments at reservations and tribal communities and seeking tribal government representation in meetings, conferences, summits, advisory committees, and review boards concerning issues with tribal implications.
48 Code of Federal Regulations 44716	These standards, effective as of 1983, provide technical advice for archaeological and historic preservation practices. Their purpose is (1) to organize the information gathered about preservation activities; (2) to describe results to be achieved by federal agencies, states, and

Table 3.12-1. Applicable Laws, Regulations, and Plans for Cultural and Paleontological Resources

Law or Regulation	Description
The Secretary of Interior's Standards and Guidelines for Archaeology and Historical Preservation	others when planning for the identification, evaluation, registration, and treatment of historic properties; and (3) to integrate the diverse efforts of many entities performing historic preservation into a systematic effort to preserve the nation's cultural heritage.
36 Code of Federal Regulations 67 The Secretary of the Interior's Standards for Rehabilitation	These standards were established by the Secretary of the Interior in 1986 to homogenize rehabilitation efforts of nationally significant historic properties and buildings. These standards pertain to actions involved in returning a property to a state of utility through repair or alteration. This allows for the preservation of historic and cultural values of the property, while giving it an efficient contemporary use.
36 Code of Federal Regulations 68 The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings	The Standards for the Treatment of Historic Properties is a compilation of 34 guidelines to promote the responsible preservation of U.S. historic cultural resources. The standards specifically address preservation, rehabilitation, restoration, and reconstruction of historic materials. The standards are not intended to be the sole basis for decision making regarding whether a historic property should be saved, but to provide consistency in conservation and restoration practices.
16 United States Code § 470aaa 1-11 Paleontological Resources Preservation Act of 2009	With the passage of the Paleontological Resources Preservation Act of 2009, paleontological resources are a significant resource, and it is now standard practice to include paleontological resources in NEPA studies in all instances where there is a possible effect.
Local	
City of Vernon General Plan Policy R-4.2	Support the efforts of interested agencies or private organizations to undertake surveys or other research efforts to document buildings and places in Vernon of historic and/or architectural significance.

Notes:
CEQ=Council for Environmental Quality; CFR=Code of Federal Regulations; EIS=Environmental Impact Statement; EO=Executive Order; FRA=Federal Railroad Administration; NEPA=National Environmental Policy Act; NHPA=National Historic Preservation Act; NRHP=National Register of Historic Places; SEIR=Supplemental Environmental Impact Report; USC=United States Code

3.12.2 Methods for Evaluating Environmental Effects

Topics Considered

For the Malabar Yard railroad improvements, an evaluation was performed to determine if they would affect:

- Built environment historic properties;
- Known or unknown archaeological historic properties; and/or

- Paleontological Resources.

Geographic Area Considered

Cultural Resources

The APE is defined as the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR § 800.16[d]).

In complying with the regulations of Section 106 (36 CFR 800), the following methodology was used to delineate the APE for the undertaking:

- **Project Footprint:** The Project footprint for the design options considered was used for the identification, evaluation, and assessment of effects for archaeological resources. It includes any ground area that would potentially be directly affected by excavation, grading, construction, demolition, temporary access and staging activities, utility relocation, or railroad track reconfiguration.
- **APEs:** The APE is used for the identification, evaluation, and assessment of effects for built environment resources. The APE for built environment resources includes the parcels encompassed by the Project footprint for the design options considered. If any portion of a parcel is included in the Project footprint for the design options considered, the entire parcel is included within the APE. Additionally, the APE includes any adjacent parcels containing built environment resources sensitive to potential visual, noise, or vibration effects.

A detailed description of the APE, with accompanying maps, is presented in *Link US Supplemental Cultural Resource Report* (Appendix M of the EIS/SEIR).

The SHPO was consulted on the delineation of the APE for the project:

- In a letter to the FRA dated September 27, 2018, SHPO concurred with the adequacy of FRA's APE delineation and efforts to identify historic properties, as documented in the *Link US Historic Property Survey Report* (July 2018) and supporting documents.
- On February 10, 2021, SHPO concurred with the CHSRA's supplemental efforts to identify historic properties and had no comments regarding the updated APE, as documented in the *Link US Supplemental Cultural Resource Report* (December 2020).
- On June 28, 2023, SHPO concurred with the CHSRA's supplemental efforts to identify historic properties and had no comments regarding the updated APE, as documented in the *Link US Second Supplemental Cultural Resource Report* (May 2023).

The APE for the Section 106 undertaking is discontiguous and comprises a portion in the City of Los Angeles, which corresponds to the Build Alternative discussed in the EIS/SEIR, and a portion

in the City of Vernon, which corresponds to the Malabar Yard railroad improvements discussed in this document.

Figure 3.12-1 depicts an overview of the portion of the APE in the City of Vernon. The subsurface vertical extent of the Project footprint for the design options considered takes into account the total depth of ground disturbance associated with construction of the Malabar Yard railroad improvements. The estimated maximum excavation depth in the portion of the Project footprint for the design options considered is 10 feet, as depicted on Figure 3.12-2.

Paleontological Resources

The Malabar Yard Paleontological Resources Survey Area (RSA) corresponds to the Malabar Yard study area and is generally used to characterize the affected environment for paleontological resources. The Project footprint for the design options considered, where disturbance within geologic units that have a high sensitivity are located, is used to determine where potential impacts on paleontological resources may occur.

Methodology

Cultural Resources

Coordination of Section 106 Process with NEPA Compliance

Title 36 CFR Part 800 defines the Section 106 process and documentation requirements. The Advisory Council on Historic Preservation advises federal agencies to coordinate compliance with Section 106 of the National Historic Preservation Act (NHPA) and the procedures in the regulations implementing Section 106, with steps taken to meet the requirements of NEPA so they can meet the purposes and requirements of both statutes in a timely and efficient manner. When NEPA review and Section 106 are integrated, measures to avoid, minimize, or mitigate adverse effects while identifying alternatives and preparing NEPA documentation can be assessed. Such measures are binding commitments documented in the EIS/SEIR, as well as in compliance with Section 106 through the preparation of a Memorandum of Agreement.

The Section 106 undertaking comprises the Build Alternative discussed in the EIS/SEIR and the Malabar Yard railroad improvements discussed in this document.

Section 106 Technical Studies Prepared for the Project

The following technical studies were prepared to support the EIS/SEIR and document CHSRA's compliance with Section 106 of the NHPA:

- ***Link US Historic Property Survey Report* (July 2018)**, including an *Archaeological Survey Report*, *Historical Resources Evaluation Report*, and other supporting documents that detail efforts to identify historic properties. The findings of these studies received concurrence from SHPO on September 27, 2018.

- ***Link US Supplemental Cultural Resource Report*** **(December 2020)**, which updates the identification of historic properties in response to changes to the Project design. The findings of this study received concurrence from SHPO on February 10, 2021.
- ***Link US Second Supplemental Cultural Resource Report*** **(May 2023)**, which documents additional updates to the identification of historic properties due to the time elapsed since previous studies and to changes to the Project design and alternatives considered. The findings of this study received concurrence from SHPO on June 28, 2023.
- ***Link US Finding of Effect Report*** **(August 2023)**, which analyzes the effects of the Project on archaeological and built environment historic properties and provides draft mitigation measures to support Section 106 consultation regarding the resolution of adverse effects. The findings of this study received concurrence from SHPO on November 20, 2023.

The above technical studies inform the findings described herein. The documents are available in Appendix M of the EIS/SEIR, in redacted form to protect locational information of sensitive resources.

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Figure 3.12-1. Portion of the Area of Potential Effects in the City of Vernon

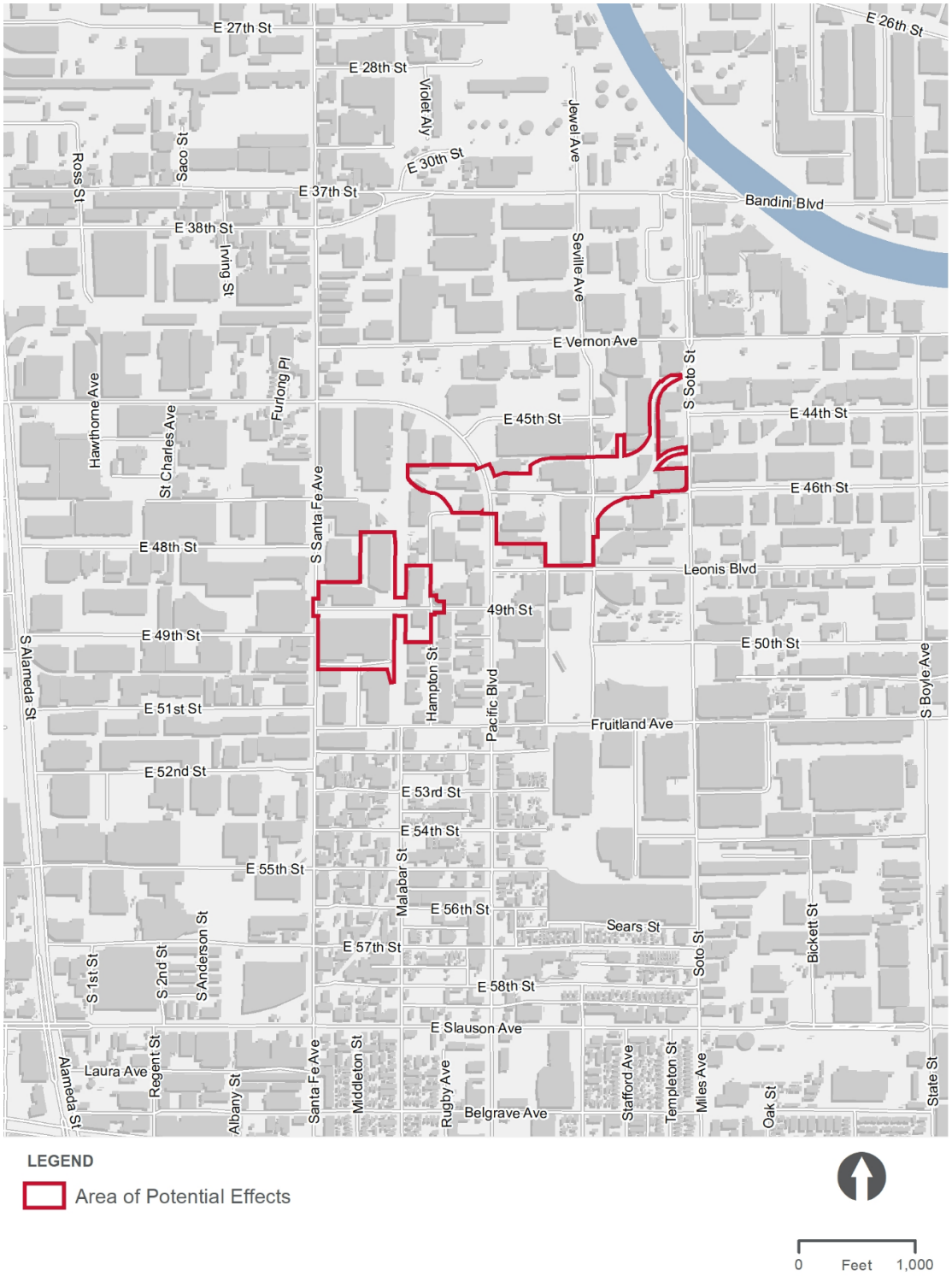

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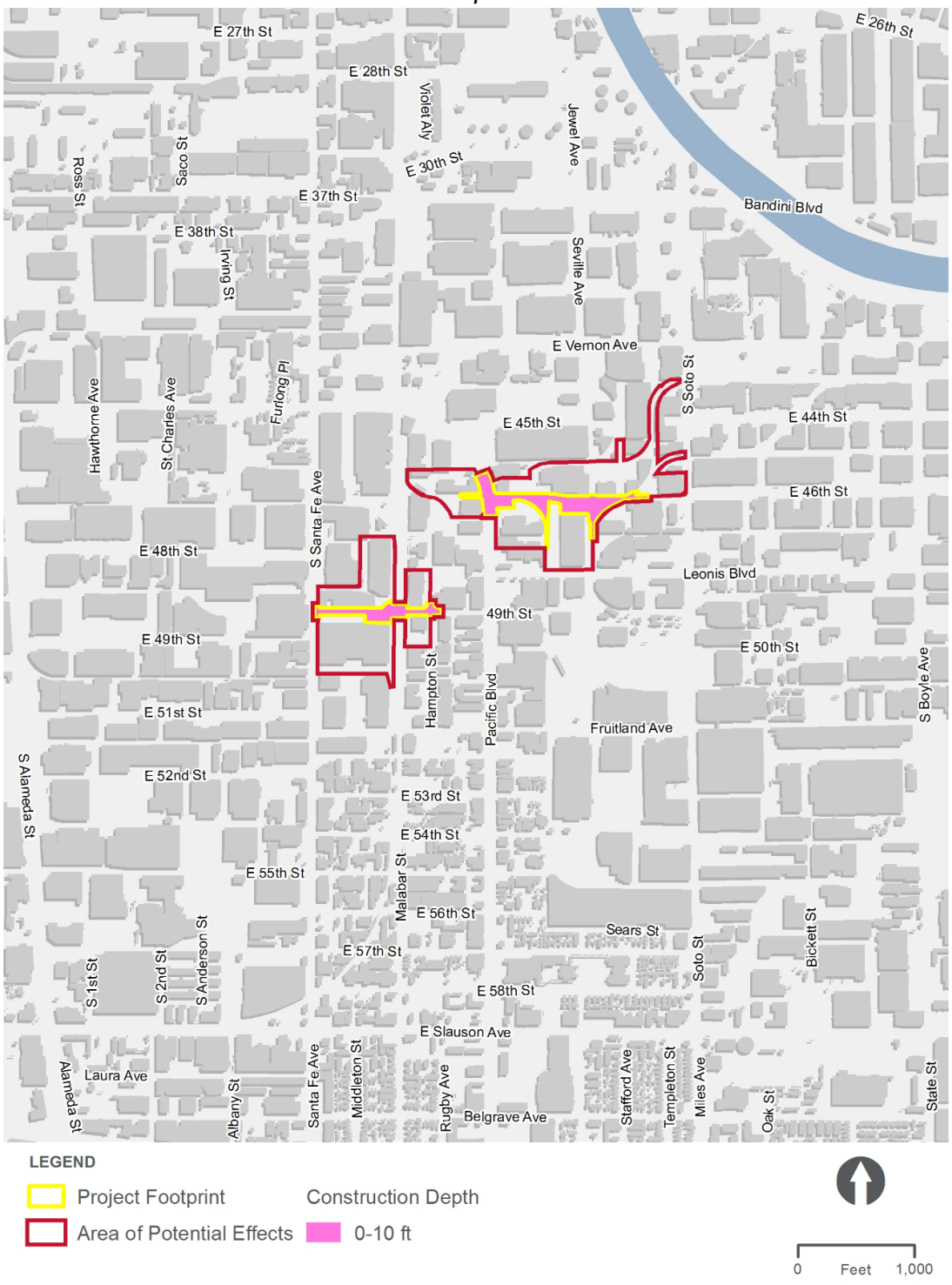
Figure 3.12-2. Estimated Maximum Vertical Excavation Depths of the Malabar Yard Railroad Improvements



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Identification of Historic Properties

Archaeological Resources. The results of the identification of archaeological resources in the portion of the Project footprint for the design options considered in the City of Vernon are documented in the *Link US Supplemental Cultural Resource Report* (Metro 2020a). Information was utilized from the California HSR System – Los Angeles to Anaheim Project Section *Archaeological Survey Report* (CHSRA 2017) to identify archaeological historic properties in the portion of the Project footprint for the design options considered in the City of Vernon, as the areas studied overlap.

Built Environment Resources. The results of the historical and architectural resource survey of the portion of the APE in the City of Vernon are documented in the *Link US Supplemental Cultural Resource Report* (Metro 2020a). Information was utilized from the California HSR System – Los Angeles to Anaheim Project Section *Historic Architectural Survey Report* (CHSRA 2019) to identify historic properties in the portion of the APE in the City of Vernon, as the areas studied overlap.

In addition to property research, the following standard sources of information were reviewed in the process of compiling this report:

- National Register of Historic Places (NRHP);
- California Points of Historical Interest;
- California Historical Landmarks;
- California Register of Historical Resources;
- California Historic Resource Inventory System; and
- Caltrans Historic Highway Bridge Inventory.

National Register of Historic Places Eligibility Criteria

The NRHP eligibility criteria (36 CFR 60.4) were applied to evaluate the historic significance of cultural resources identified. Properties eligible for listing in the NRHP are districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
B. That are associated with the lives of persons significant in our past; or
C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
D. That have yielded, or may be likely to yield, information important in prehistory or history.

Properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization may be determined to be eligible for inclusion in the NRHP provided they also meet one of the above eligibility criteria (54 USC 302706(a)).

Outreach Efforts to Agencies, Native American Tribes, Interested Parties, and the Public

The NEPA process has included an extensive public outreach effort, including formal and informal outreach methods such as public meetings, key stakeholder and community group briefings, project development team and agency coordination meetings, advertisements, email blasts, mailings, pamphlet distribution, website updates, and social media engagement. Scoping meetings were held in 2016 and 2020.

In accordance with applicable requirements of NEPA and the NHPA, FRA, the previous federal lead agency for Link US, initiated Section 106 consultation for the Project in 2016 and identified a wide range of consulting parties in support of FRA's consultation with interested Native American tribes, federal, state, and local government agencies, special-interest groups and local historical societies, and the SHPO, as documented in the 2018 *Link US Historic Property Survey Report* (Appendix M of the EIS/SEIR).

With FRA's delegation of the NEPA lead agency role to CHSRA, the responsibility for Section 106 compliance is with CHSRA. In 2019, CHSRA notified tribes and other consulting parties of the NEPA delegation. Consulting parties were re-engaged in 2020 regarding the findings of the *Link US Supplemental Cultural Resource Report* and in 2023 regarding the *Link US Second Supplemental Cultural Resource Report,* as documented in both technical studies (Appendix M of this EIS/SEIR). Section 106 consultation is currently ongoing with federal, state, and local government agencies, Native American tribes, and other interested groups. Consulting parties have reviewed the *Link US Draft Finding of Effect Report* and will have the opportunity to participate in development of measures to avoid, minimize, and mitigate adverse effects on historic properties.

During consultation, Native American tribes did not identify any properties of traditional religious or cultural importance within or near the portion of the APE in the City of Vernon.

Assessing Effects

A project that causes a substantial adverse change in the significance of a historic property is a project that may have an adverse effect under NEPA. To comply with Section 106 of the NHPA, any Project-related effects on properties listed in or determined eligible for inclusion in the NRHP must be analyzed by applying the criteria of adverse effect (36 CFR § 800.5[a]), as described below.

> *An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the NRHP.*

Adverse effects may include reasonably foreseeable effects caused by the project that may occur later in time, be farther removed in distance, or be cumulative.

Adverse effects on historic properties include, but are not limited to:

- Physical destruction of or damage to all or part of the property.
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access that is not consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR 68) and applicable guidelines.
- Removal of the property from its historic location.
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance.
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features.
- Neglect of a property, which causes its deterioration except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization.
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

Paleontological Resources

Based on the results of the geologic map review and literature and museum records searches for the paleontological RSA, the paleontological sensitivity of the geologic units within the paleontological RSA were ranked using Caltrans' tripartite scale and effects that may result from the Malabar Yard railroad improvements were evaluated based on available engineering data and preliminary geotechnical investigations.

Sensitivity Criteria

The Caltrans paleontological sensitivity scale comprises three rankings: High Potential, Low Potential, and No Potential. The criteria for each ranking, as stated in the Caltrans *Standard Environmental Reference*, Volume 1: Guidance for Compliance, Chapter 8 - Paleontology, are described below.

- *High Potential*
    - This category includes rock units, which, based on previous studies, contain, or are likely to contain, significant vertebrate, significant invertebrate, or significant plant fossils. High sensitivity includes the potential for containing: 1) abundant vertebrate fossils; 2) a few significant fossils (large or small vertebrate, invertebrate, or plant

fossils) that may provide new and significant taxonomic, phylogenetic, ecologic, and/or stratigraphic data; 3) areas that may contain datable organic remains older than recent, including woodrat (*Neotoma* sp.) middens; or 4) areas that may contain unique new vertebrate deposits, traces, and/or trackways. Areas with a high potential for containing significant paleontological resources require monitoring and mitigation.

- *Low Potential*
    - This category includes sedimentary rock units that: 1) are potentially fossiliferous but have not yielded significant fossils in the past; 2) have not yet yielded fossils but possess a potential for containing fossil remains; or 3) contain common and/or widespread invertebrate fossils if the taxonomy, phylogeny, and ecology of the species contained in the rock are well understood. Sedimentary rocks expected to contain vertebrate fossils are not placed in this category because vertebrates are generally rare and found in more localized strata. Rock units designated as low potential generally do not require monitoring and mitigation. However, as excavation for construction starts, it is possible that new and unanticipated paleontological resources might be encountered. If the resource is determined to be significant, monitoring and mitigation plans are required.
- *No Potential*
    - This category includes rock units of intrusive igneous origin, most extrusive igneous rocks, and moderately to highly metamorphosed rocks, which are classified as having no potential for containing significant paleontological resources.

3.12.3 Affected Environment

Historical and Cultural Setting

In-depth contexts for the pre-contact and historic periods are included in the *Link US Historic Property Survey Report* (July 2018) and the *Link US Supplemental Cultural Resource Report* (December 2020) (Appendix M of the EIS/SEIR). To provide context of the richness and high sensitivity for cultural resources of the area, this section briefly summarizes the different time periods and people who used and settled the area around the Malabar Yard railroad improvements. The area has a complex cultural background that begins with Native American occupation and use going back at least 10,000 years.

Pre-Contact Period

Several chronologies based on archaeological finds are used to divide different periods of Native American cultural habitation and development. The most commonly used cultural chronology divides human occupation of southern California into five broad periods: the Paleoindian Period (10,000 before present [BP] to 8000 BP), the Early Period or Millingstone Horizon (8000 BP to 3000 BP), the Middle Period or Intermediate Horizon (3000 BP to anno domini [AD] 1000), the Late Prehistoric Period (AD 1000 to 1770), and the Historic Period (AD 1770 to present).

Different patterns and types of material culture distinguish each of these periods. Large fluted or leaf-shaped projectile points from the Paleoindian Period indicate a reliance on hunting large animals. Human diet probably included smaller game and harvested plants. Sites representing this period have been found mostly inland at prehistoric lakebeds (e.g., China Lake, Tulare Lake).

The Early Period or Millingstone Horizon was characterized by the widespread adoption of millingstones, including metates and manos used in the preparation of plant and seed-based foods. Subsistence on terrestrial game supplemented the diet of people during this time. During the Middle Period or Intermediate Horizon, subsistence expanded to a greater diversity of plant and animal foods. Tools used during this period included mortars and pestles, likely indicating a new reliance on hard nut foods such as acorns.

During the Late Prehistoric Period, Native American groups that were later known as the Gabrieleño, Juaneño, and Luiseño lived throughout much of the southern California coastal area extending from present-day southern Los Angeles County to northern San Diego County. Villages among these groups were permanent to semi-permanent, with seasonal camps. At this time, trade networks linking the coast, Channel Islands, mountains, and inland valleys became more complex and significant in shaping cultural practices.

Gabrieleño Ancestors

The portion of the APE in the City of Vernon is on lands that were once inhabited by the Gabrieleño people. The Gabrieleño lived in an area of more than 1,500 square miles and included the watersheds of the Los Angeles River, San Gabriel River, Santa Ana River, and Rio Hondo, as well as the southern Channel Islands. There were at least 50 residential communities, or villages, each with 50 to 150 individuals. Each community consisted of one or more lineages associated with a permanent territory represented by a permanent central settlement, with associated hunting, fishing, gathering, and ritual areas. A typical settlement had a variety of structures used for daily living, recreation, and rituals. In the larger communities, the layout was a little more intricate, characterized by a ritualistic or sacred enclosure that was encircled by the residences of the chief and community leaders, around which were smaller homes of the rest of the community. Sweathouses, cemeteries, and clearings for dancing and playing were also common at larger settlements.

Historic Period

The Historic Period begins with the expansion of Spanish exploration and settlement in California in the late 1700s. Critical turning points within this period were the establishment of Mission San Gabriel (1771) and the Asistencia of Los Angeles (1784), Mexican independence (1821), secularization of mission lands, the Mexican-American War (1846 to 1848), and American sovereignty in California. The settlement of Europeans in California brought many conflicts and disease to the Gabrieleño, as the Spanish claimed the lands as their own, and, in the process, incorporated Native American groups into the mission system. As a result of this and subsequent historical events, including the takeover of indigenous territories under Mexican and American rule, as well as the displacement of Native American populations, the Gabrieleño people, along with other groups, saw their populations and cultural traditions decimated.

Spanish and Mexican Period (1781 to 1850)

Europeans first sailed up the coast of California in 1542 as part of a Spanish exploration expedition led by Captain Juan Rodríguez Cabrillo. Cabrillo sailed into San Pedro Harbor and called it Bahía de los Fumos (Bay of the Smokes) due to the Native American campfires he observed along the shores. It is estimated that the Gabrieleño people numbered approximately 5,000 individuals at this time, spread across hundreds of villages throughout the Los Angeles Basin and the Channel Islands, although the Native American population may have been as large as 10,000.

Spain would not resume in-depth exploration and settlement of the region until over 200 years later, when Russian and French encroachment threatened Spain's interests in the territories known as Alta California (Upper California). The renewed Spanish presence in California followed the 1769 expedition led by Captain Gaspar de Portolá. Shortly thereafter, Spain began to establish a system of pueblos, presidios, ranchos, and missions along the California coast to bolster Spanish settlement and political presence. The Spanish Franciscan missionaries, who headed north from their long-established presence in Baja California, established a system of 21 missions, including the nearby San Gabriel Mission, along El Camino Real, and incorporated much of the Native American population during the process, leading to their decline and increasingly hostile relationships between the Europeans and the Native Americans. The name Gabrieleño was given to Native Americans associated with Mission San Gabriel.

City of Vernon

Merchant-rancher John B. Leonis and ranchers Thomas J. and James L. Furlong founded and incorporated the city of Vernon in 1905 on land reclaimed from the floodplain of the Los Angeles River. The city took its name from Vernon Avenue, which crossed through the center of town. The city founders wanted to take advantage of three major railroads running through the area to create an "exclusively industrial" city. Vernon's limited taxation and promise of no political or industrial strife attracted a handful of firms from downtown Los Angeles. Amid the gradual arrival of industrial firms, the city's founders took advantage of anti-vice blue laws instituted by middle-class moral reformers in other parts of Los Angeles to promote Vernon as "Sporting Town"—a center of the types of working-class leisure and entertainment targeted by reformist blue laws. Vernon also earned a reputation for gambling and prostitution.

Commanding a network that dominated Vernon's political offices and administrative positions for decades, Leonis remained committed to the goal of making his city the leading industrial center of metropolitan Los Angeles as nationwide anti-vice campaigns intensified during the 1910s, ultimately leading to National Prohibition in the 1920s. According to historical geographer Mike Davis, in 1912 Vernon's leaders "annexed the neighboring Santa Fe classification yards," establishing a partnership with the giant corporation that became the city's leading landowner and industrial developer. The pace of industrialization in Vernon increased during World War I with the establishment of an oil company facility, metal works, and lumber yards and other construction materials suppliers' facilities.

With industrial production increasing by 41 percent in the Los Angeles area in 1924 alone, the intensive industrialization of Vernon proved a resounding success. During the 1920s and 1930s, companies such as U.S. and Bethlehem Steel, Alcoa (aluminum), Owens (glass), American Can, and automaker Studebaker all set up shop in Vernon. Fed up with struggles with Southern California Edison, Leonis marshalled passage of a 1932 municipal bond measure for construction of Vernon's own light and power plant in order to provide cheaper utility rates to industrial firms. During the World War II years of the 1940s and the onset of the Cold War into the 1950s, Vernon attracted the aerospace firm of Norris Industries along with paper and cardboard suppliers, Bruswig (a drug company), food processors such as General Mills and Kal Kan, and meat packing operations.

Vernon continues to be a major manufacturing and shipping center in Southern California despite the evolution of industry over the last 100 years. The city has embraced smaller industrial establishments like fashion design, garment making, film production, and waste recycling. Over 100 miles of railroad spurs continue to cross Vernon and mark it as a historically and enduringly industrial city.

Cultural Resources

Archaeological Resources

Archaeological resources are the physical remains of past human activities that can be either prehistoric or historic in origin. Archaeological sites are locations that contain substantial evidence of human activity.

Investigations undertaken by ICF for the California HSR System – Los Angeles to Anaheim Project Section *Archaeological Survey Report* cover the portion of the Project footprint for the design options considered in the City of Vernon. Results of the survey identified no archaeological resources in the portion of the Project footprint for the design options considered in the City of Vernon (CHSRA 2017). Because the entirety of the portion of the Project footprint for the design options considered in the City of Vernon is paved or built over, a pedestrian archaeological survey was not undertaken.

A geoarchaeological study was also conducted for the California HSR System – Los Angeles to Anaheim Project Section *Archaeological Survey Report* (CHSRA 2017) to assess the potential for encountering undocumented prehistoric archaeological sites based on physical environmental attributes. This study covers the majority of the portion of the Project footprint for the design options considered in the City of Vernon. Even though the California HSR System – Los Angeles to Anaheim Project Section *Archaeological Survey Report* (CHSRA 2017) identified no archaeological resources, the results of the geoarchaeological study indicate that the portion of the Project footprint for the design options considered in the City of Vernon has elevated potential to contain buried archaeological sites.

Archaeological sites (as well as some non-archaeological locations) may also have traditional religious and cultural significance to Indian tribes. During consultation, Native American tribes did

not identify any properties of traditional religious or cultural importance within or near the portion of the APE in the City of Vernon.

Built Environment Resources

Built environment resources include recognizable human-made historical architectural features. This category typically includes existing, aboveground buildings and structures that date from the earliest territorial settlements until the present day but are generally classified as 50 years or older.

Investigations undertaken for the California HSR System – Los Angeles to Anaheim Project Section *Historic Architectural Survey Report* (CHSRA 2019) cover the portion of the APE in the City of Vernon and included the identification and evaluation of a total of 16 built environment resources. These include 11 resources determined ineligible for listing in the NRHP, 4 resources exempt from evaluation, and 1 resource, the Solar Manufacturing Corporation Building (4553 Seville Avenue, Vernon), determined eligible for listing in the NRHP. SHPO concurred with these determinations on May 17, 2019.

Field surveys of all developed properties with buildings or structures within the portion of the APE in the City of Vernon were undertaken between December 2019 and January 2020 as reported in the *Link US Supplemental Cultural Resource Report* (Metro 2020a). All parcels were observed from the public ROW, and digital photographs were taken of all buildings and structures that were visible on each property.

The historic and architectural resources survey resulted in the identification of one built environment historic property in the portion of the APE in the City of Vernon (Table 3.12-2). Further detail on this resource, as well as other resources located in the portion of the APE in the City of Los Angeles, can be found in the *Link US Supplemental Cultural Resource Report* (Metro 2020a). The resource is shown in Figure 3.12-3, which shows the portion of the APE in the City of Vernon and has corresponding map reference number that identifies the resource.

Table 3.12-2. Built Environment Historic Properties in the Portion of the Area of Potential Effects in the City of Vernon

Name (Map Reference No.[a])	Address/Location	Community	OHP Status Code[b]
Solar Manufacturing Corporation Building (#1)	4553 Seville Avenue	Vernon, California	2S2

Source: **Metro 2020a**
Notes:
[a] ***This map reference code corresponds to Figure 3.12-3.***
[b] ***OHP Status Codes: 2S2=Individual property determined eligible for NRHP by consensus through Section 106 process.***
No.=number; NRHP=National Register of Historic Places; OHP=Office of Historic Preservation.

Properties Previously Determined Eligible for the National Register of Historic Places

One property identified within the APE was previously determined eligible for the NRHP as a result of a consensus between a federal agency and the SHPO. The following historic property has not been altered since it was last evaluated and did not require reevaluation by the Link US Project:

- ***Solar Manufacturing Corporation Building*** (4553 Seville Avenue, Vernon; Map Reference #1) is a single-story Late Moderne industrial property. The building is recorded as a significant example of its style and type that also retains excellent integrity (Roderick 2017). Character-defining features include a low-slung single-story horizontality, box-like plan of the works component with rhythmically spaced metal frame window bays and sawtooth roof, and an articulated office and reception component. The character-defining features of the Late Moderne style office and reception component include weighty, asymmetrical massing and an angular composition of solid rectilinear forms placed in balanced contrast; multimaterial cladding, such as smooth stucco and Roman brick; bezeled metal frame ribbon windows; original metal awnings; an emphasized entrance; and low, architecturally integrated Roman brick planters. The property was determined eligible for listing in the NRHP at the local level, under Criterion C, by CHSRA as a significant and highly intact example of a light industrial property designed in the Late Moderne style. SHPO concurred with this determination in a letter dated May 17, 2019. The property served as the Solar Manufacturing Corporation's office and warehouse from its construction in 1954 until circa 1973, and its period of significance is 1954, its year of construction. The property's NRHP-eligible historic boundary is the parcel boundary, which includes the building and its adjacent landscape features, such as Roman brick planters, trucking dock, railroad siding dock, and original surface parking areas. Based on a survey completed for the Link US Project between December 2019 and January 2020, there has been no change in the integrity, significance, or architectural narrative since the resource was previously surveyed. Therefore, the previous eligibility determination remains unchanged.

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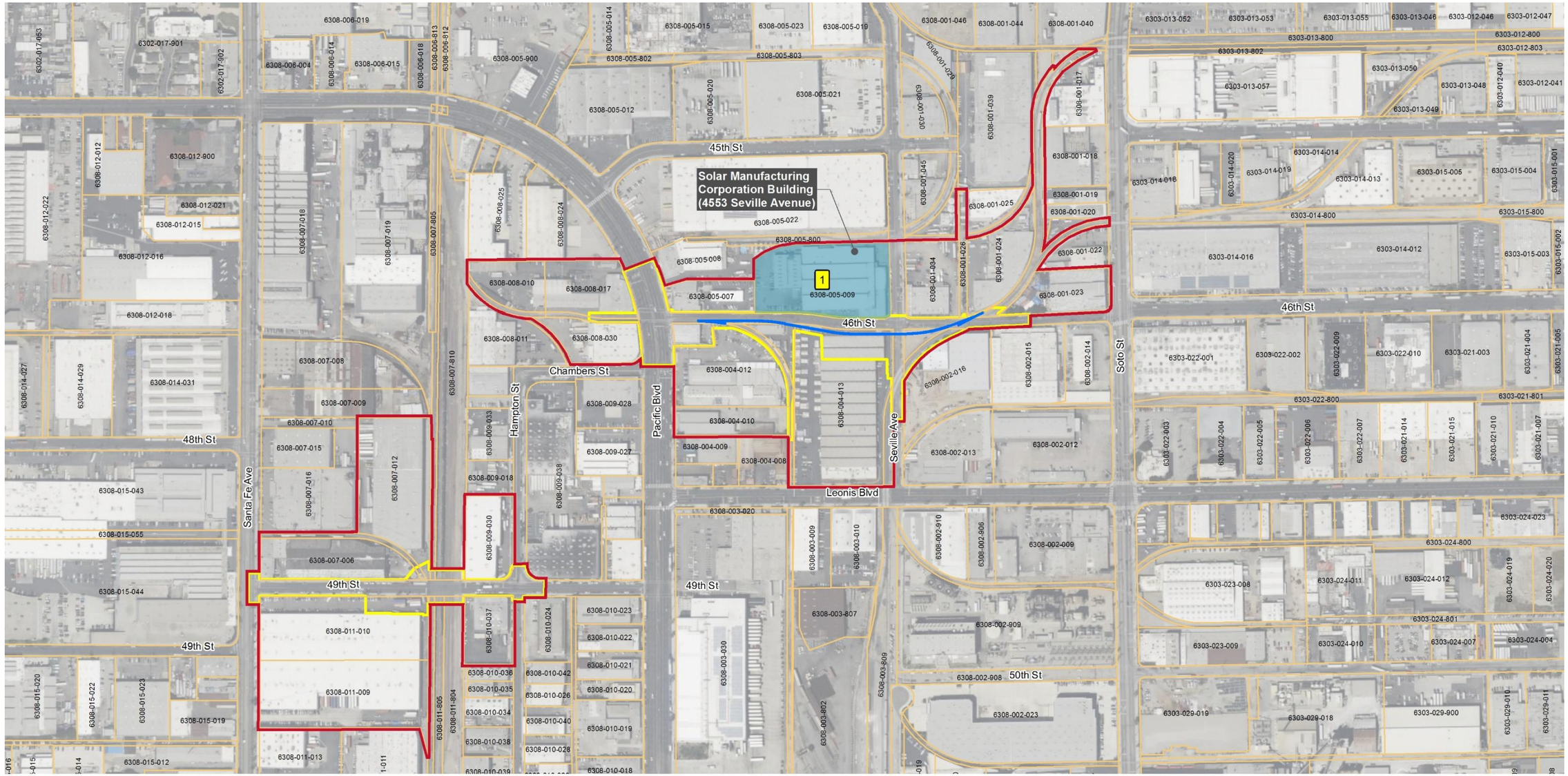
Figure 3.12-3. Portion of Area of Potential Effects in City of Vernon and Location of Built Environment Historic Properties



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Properties Determined Not Eligible for the National Register of Historic Places

All other resources in the portion of the APE in the City of Vernon were determined not eligible for listing in the NRHP because they have not achieved significance within the past 50 years and do not have exceptional importance.

As documented in the *Link US Supplemental Cultural Resource Report* (Metro 2020a), 11 properties in the portion of the APE in the City of Vernon were determined ineligible for listing in the NRHP by CHSRA as part of the Los Angeles to Anaheim Project Section of the California HSR System (CHSRA 2019). SHPO concurred with these determinations of ineligibility in a letter dated May 17, 2019. These resources have been assigned a California Office of Historic Preservation (OHP) status code of 6Y, as shown in Table 3.12-3, which identifies a resource that has been determined ineligible for the NRHP by consensus through the Section 106 process.

Table 3.12-3. Properties Determined Not Eligible for National Register of Historical Places in Previous Studies

Name	Address/Location	Community	OHP Status Code[a]
Malabar Yard Railroad Infrastructure	Between Vernon Avenue/Pacific Boulevard and Fruitland Avenue	Vernon, California	6Y
—	4848 Santa Fe Avenue	Vernon, California	6Y
—	2516 49th Street	Vernon, California	6Y
—	4811 Hampton Street	Vernon, California	6Y
—	4585 Pacific Boulevard	Vernon, California	6Y
—	4600 Pacific Boulevard	Vernon, California	6Y
—	4580 Pacific Boulevard	Vernon, California	6Y
—	4618 Pacific Boulevard	Vernon, California	6Y
—	2665 Leonis Boulevard	Vernon, California	6Y
—	4550 Seville Avenue	Vernon, California	6Y
—	2727 46th Street	Vernon, California	6Y

Source: Source: **Metro 2020a**
Notes:
[a] OHP Status Code 6Y=Determined ineligible for NRHP by consensus through Section 106 process.
NRHP=National Register of Historic Places; OHP=Office of Historic Preservation.

As part of the current investigation, one of the existing ineligible resources was updated to include an additional resource component (Metro 2020a). Documentation of the Malabar Yard Railroad

infrastructure was updated to also include a wigwag crossing signal located at the south shoulder of 49th Street, immediately west of Malabar Yard. It consists of a base, pole mast, cantilever, and bracket arm. The Malabar Yard Railroad infrastructure was previously evaluated and determined ineligible for listing in the NRHP (CHSRA 2019). SHPO concurred with this determination in a letter dated May 17, 2019. While the signal is considered relatively rare, its rarity does not bestow significance, nor does its presence render the Malabar Yard Railroad infrastructure more significant. Therefore, the wigwag signal is not eligible for the NRHP under any criteria individually or as part of the Malabar Yard Railroad infrastructure, and it does not display significance under the NRHP. SHPO concurred with these updated findings in a letter dated February 10, 2021.

As a part of the current investigation, two additional properties were identified through research and survey within the portion of the APE in the City of Vernon (Table 3.12-4). As documented in the *Link US Supplemental Cultural Resource Report* (Metro 2020a), both properties were determined ineligible for listing in the NRHP. SHPO concurred with these determinations in a letter dated February 10, 2021.

Table 3.12-4. Properties Determined Not Eligible for the National Register of Historical Places as a Result of Evaluation for the Link Union Station Project

Name	Address/Location	Community	OHP Status Code[a]
Fairbanks-Morse Company	4535 Soto Street	Vernon, California	6Y
—	4824 Santa Fe Avenue	Vernon, California	6Y

Source: Metro 2020a
Notes:
[a] OHP Status Code 6Y = Determined ineligible for NRHP by consensus through Section 106 process.
NRHP=National Register of Historic Places; OHP=Office of Historic Preservation

Paleontological Resources

The paleontological RSA is located within the Los Angeles Basin in the northern section of the Peninsular Ranges Geomorphic Province. The Peninsular Ranges Geomorphic Province is characterized by mountain ranges separated by northwest-trending valleys, and it extends from southwestern California into Mexico. The Los Angeles Basin is bordered by the Santa Monica and San Gabriel Mountains to the north, the Santa Ana Mountains to the east, and the Pacific Ocean to the west. While the Los Angeles Basin is traditionally considered to be part of the Peninsular Ranges Geomorphic Province, it is more tectonically related to the Transverse Ranges Geomorphic Province. The Los Angeles Basin is one of the largest and deepest valleys in southern California and is filled with over 5,500 meters of sediments that accumulated over the past 4 million years as a result of uplift of the mountains of the western Transverse Ranges and contemporaneous sinking of the basin associated with the rotation of the Transverse Ranges.

Geologic Units

As Figure 3.12-4 illustrates, geologic mapping by Dibblee and Ehrenspeck (1989) and Jennings (1962) indicates that the entirety of the paleontological RSA surface is underlain by Quaternary younger alluvium (Qa [Dibblee and Ehrenspeck, 1989], Qal [Jennings,1962]). Qa/Qal consists of surficial deposits that are Holocene in age (11,000 years old or younger) and may overlie older geologic units present in the subsurface. Qa/Qal occur as fluvial deposits in valleys and floodplains in the Los Angeles Basin. Deposits are composed of poorly consolidated alluvial gravel, sand, silts, and clay; and may be of variable color, but are often tan to brown (Jahns 1954; Dibblee and Ehrenspeck 1989). Previous investigations by Paleo Environmental Associates and ICF in 2018 indicate that these deposits are only 6 feet thick in the paleontological RSA, below which depth the Holocene deposits become progressively older and more paleontologically sensitive.

Paleontological Resources

No fossil localities have been recorded from within the boundaries of the paleontological RSA (Jefferson 1991; Lander 1997, 2000, 2008; McLeod 2016; Miller 1971). Qa/Qal are regarded as having a low paleontological sensitivity at the surface, increasing to high paleontological sensitivity at depth. Within the paleontological RSA, deposits of Qa/Qal may transition to high sensitivity at depths as shallow as 6 feet below the natural ground surface.

Fossil localities in the vicinity of the paleontological RSA are detailed in Table 3.12-5. Fossilized remains representing two taxonomically diverse fossil assemblages were found 11.5 to 15.5 and 30.5 to 33.5 feet below grade along 26th Street in Vernon in the vicinity of the paleontological RSA from localities Natural History Museum of Los Angeles County (LACM) 17869 and 17870 and LACM 7701 and 7702 (Lander 2008; McLeod 2016). The remains consist of the valves of dominantly brackish-water species of ostracods, the shells of freshwater species of snails and clam and land snails, and the bones and teeth of small-bodied continental vertebrate species, including fishes, salamanders, lizards, snakes, birds, rabbits, and rodents (Lander 2008). The slender salamander Batrachoseps in the lower assemblage represents only the second reported occurrence of a slender salamander from the North American Pleistocene fossil record (Lander 2008). A carbon-14 radiometric dating analysis of mollusk shells indicates the lower assemblage is 35,980 + 530 years (late Pleistocene) in age and assignable to the Rancholabrean North American Land Mammal Age (Lander 2008). Another microfossil locality, LACM 7758, produced specimens of threespine stickleback, meadow vole, deer mouse, pocket gopher, and pocket mouse from 16 feet below the surface near the intersection of 46th Street and Western Avenue (McLeod 2016).

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Figure 3.12-4. Geologic Units within the Vicinity of the Paleontological Resources Study Area

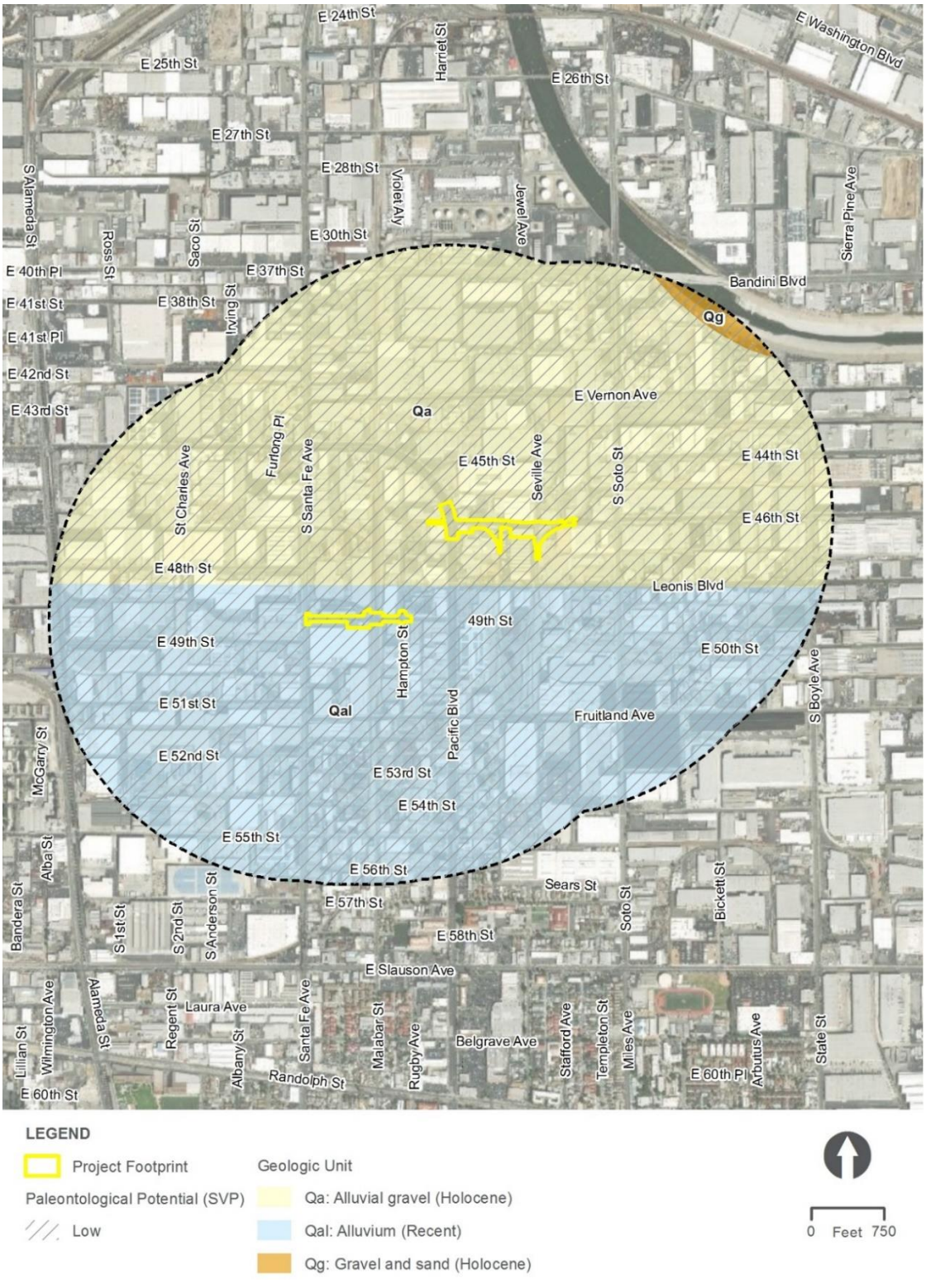

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Table 3.12-5. Fossil Localities in the Project Vicinity

Locality No.	Common Name	Scientific Name	Depth	Reference
LACM 7701-7702, LACM 17869-17870	Ostracod	Ostracoda	11 to 16 feet, 30 to 34 feet	Lander 2008; McLeod 2016
	Snail, freshwater and land	Gastropoda		
	Clam, freshwater	Bivalvia		
	Threespine stickleback	*Gasterosteus aculeatus*		
	Salamander	*Batrachoseps* sp.		
	Lizard	*Lacertilia* sp.		
	Snake	Colubridae		
	Rabbit	*Sylvilagus* sp.		
	Pocket mouse	*Microtus* sp.		
	Harvest mouse	*Reithrodontomys* sp.		
	Pocket gopher	*Thomomys* sp.		
LACM 7758	Threespine stickleback	*Gasterosteus aculeatus*	16 feet	McLeod 2016
	Meadow vole	*Microtus* sp.		
	Deer mouse	*Peromyscus* sp.		
	Pocket gopher	*Thomomys* sp.		
	Pocket mouse	*Perognathus* sp.		

Source: Lander 2008; McLeod 2016

3.12.4 Environmental Consequences

No Action Evaluation

The following topics were evaluated to determine potential effects if the Malabar Yard railroad improvements in the City of Vernon were not implemented in conjunction with the Build Alternative.

Built Environment and Known or Unknown Archaeological Historic Properties

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects on built environment and known or unknown archaeological historic properties would occur as no ground disturbance would result.

Paleontological Resources

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects on paleontological resources would occur as no ground disturbance would result.

Evaluation of Malabar Yard Railroad Improvements

TOPIC 3.12-A	Built environment and known or unknown archaeological historic properties

Direct Effects – Construction

Built Environment Historic Properties

The Malabar Yard railroad improvements would not encroach upon the boundaries of the Solar Manufacturing Corporation Building, nor would they require any construction activities that would cause physical destruction of, damage to, or alteration of this historic property. Construction activities in the vicinity of the Solar Manufacturing Corporation Building include installation of new freight track along 46th Street within a new railroad ROW. The construction would take place over 75 feet to the south of the building, across from the existing 46th Street ROW, and the building and parcel that comprise the historic property would not be physically disturbed or altered.

Trucks, bulldozers, excavators, and other construction equipment would be used for work in the area, but there would be no high-intensity activities, including pile driving, at this location. Although construction would take place in the general vicinity of the historic property, there is not a potential for vibration damage during construction due to the building type (reinforced concrete), the intervening distance, and the nature of the proposed activities.

Therefore, any combination of design options for the Malabar Yard railroad improvements would have no adverse effect on the Solar Manufacturing Corporation Building. SHPO concurred with this finding on November 20, 2023.

Archaeological Historic Properties

No archaeological historic properties have been identified within the Project footprint for the design options considered; however, ground-disturbing construction activities would occur in areas with elevated potential to contain buried archaeological sites. This is considered an adverse effect. Implementation of Malabar Yard Mitigation Measure CUL-1 (described in Section 3.12.5) would avoid, minimize, or mitigate the potential for adverse effects related to the inadvertent discovery of buried archaeological resources from construction of any combination of design options for the Malabar Yard railroad improvements by requiring the preparation of an Archaeological Treatment Plan (ATP) and associated actions to be taken to address accidental discoveries including:

- A research design for evaluating the significance of any archaeological features or deposits that may be encountered during construction.

- Protocols for phased testing, significance evaluation, and data recovery of known features and deposits.
- Protocols for archaeological and Native American monitoring.
- Provisions for the accidental discovery of archaeological features or deposits during construction.
- Provisions for the accidental discovery of human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony.
- Provisions for the development of cultural resource worker environmental awareness program (WEAP) training.
- Standards for reporting the results of archaeological testing, evaluation, data recovery, and monitoring activities.
- Guidelines for the ownership and curation of archaeological data and collections.

With the implementation of Malabar Yard Mitigation Measure CUL-1, no direct adverse effect during construction would occur.

Direct Effects – Operations

Once operational, any combination of design options for the Malabar Yard railroad improvements would involve freight train traffic and storage along the railroad corridor and periodic maintenance of the railroad ROW. Since operations occur at the ground surface and intact archaeological resources, if present in the area, are more deeply buried, there would be no anticipated corresponding effects on archaeological resources as a result of long-term operations of the Malabar Yard railroad improvements.

Operation of any combination of design options for the Malabar Yard railroad improvements would not change the character of the use or physical setting of the Solar Manufacturing Corporation Building in a manner that would diminish its integrity of location, design, setting, materials, workmanship, feeling, or association, nor would the Malabar Yard railroad improvements affect the current use of the historic property as an industrial building. The resource is also located in an urban area surrounded by industrial buildings and is already in proximity to railroad tracks. The new freight track would be recognizable as new but generally perceived as similar in form to existing rail infrastructure and supporting rail activities similar to those that already take place within the physical context of the resource. Freight would operate at increased levels of service relative to existing conditions. Rail traffic would be restricted to the railroad ROW and would not alter the use or cause changes in the physical setting of the historic property, which would continue to convey its significance. Potential noise and vibration effects related to operation of the Malabar Yard railroad improvements were evaluated and presented in Section 3.6 of this document. Given that the Malabar Yard railroad improvements would be implemented in an urban area surrounded by industrial buildings, in proximity to railroad tracks and in the vicinity of an active rail yard, there would be no perceptible change in operational noise and vibration levels. Vibration associated with the operation of the Malabar Yard railroad improvements would not

result in physical damage to the Solar Manufacturing Corporation Building. Noise and vibration would not alter any of the characteristics of a historic property that qualify it for inclusion in the NRHP. No direct adverse effect would occur.

Indirect Effects – Construction and Operations

The Malabar Yard railroad improvements are proposed in an industrial-zoned area and are unlikely to encourage residential and commercial infill development that could indirectly result in physical destruction of, damage to, or alteration of built environment and known or unknown archaeological historic properties near Malabar Yard, or incrementally change the character of use or diminish the integrity of setting of historic properties in the portion of the APE in the City of Vernon. No indirect adverse effects would occur during operation of the Malabar Yard railroad improvements.

However, during construction of the Malabar Yard railroad improvements, even though the construction site would be fenced and off limits to the general public, indirect impacts may still result from increased accessibility to buried archaeological resources (such as artifacts) by construction personnel that could lead to resource looting or vandalism activities. Additionally, damage to improperly curated archaeological resources may occur. This is considered an adverse effect. Malabar Yard Mitigation Measure CUL-1 (described in Section 3.12.5) would avoid or minimize the potential for indirect adverse effects on archaeological resources to occur by requiring cultural resource WEAP training and monitoring during construction that would reduce the occurrence of looting or vandalism by construction personnel. Therefore, with the implementation of Malabar Yard Mitigation Measure CUL-1, no indirect adverse effect would occur.

TOPIC 3.12-B	Paleontological Resources

Direct Effects – Construction

Construction of any combination of design options for the Malabar Yard railroad improvements could result in direct effects on paleontological resources during any phase of work that results in the damage or destruction of fossils or the disturbance of the stratigraphic context in which they are located. Excavations beneath artificial fill or recent alluvium for components such as utility relocations and modifications to existing grade crossings may result in effects on paleontological resources if paleontologically sensitive sediments are encountered during excavation.

Ground-disturbing construction activities in shallow layers (i.e., fill or recent alluvium) would not affect paleontological resources. However, deeper excavations have the potential to affect paleontologically sensitive deposits of older Quaternary alluvium (depth not reported in cross-section but can be encountered at depths as shallow as 6 feet below the natural ground surface in the Malabar Yard vicinity). Impacts could occur where excavations exceed 6 feet below the natural ground surface. This is considered an adverse effect. Implementation of Malabar Yard Mitigation Measures PAL-1 through PAL-3 (described in Section 3.12.5) would minimize the potential for adverse effects on paleontological resources during construction. Malabar Yard

Mitigation Measure PAL-1 requires the development and implementation of a Paleontological Mitigation Plan (PMP) including site-specific mitigation recommendations and specific procedures for construction monitoring and fossil discovery; Malabar Yard Mitigation Measure PAL-2 requires delivery of a WEAP training; and Malabar Yard Mitigation Measure PAL-3 requires arrangements for curation of significant fossils recovered during construction. Therefore, with the implementation of Malabar Yard Mitigation Measures PAL-1 through PAL-3, no direct adverse effect would occur.

Direct Effects – Operations

Once construction of the Malabar Yard railroad improvements is complete, ongoing operations would occur at the ground surface. Since intact paleontological resources, if present in this area, are likely buried 6 or more feet below ground surface, there would be no anticipated corresponding effects of these operations on paleontological resources. Therefore, no direct adverse effect would occur.

Indirect Effects – Construction and Operations

The Malabar Yard railroad improvements are proposed in an industrial-zoned area and are unlikely to encourage residential and commercial infill development that could result in direct effects on paleontological resources during any phase of work that results in the damage or destruction of fossils or the disturbance of the stratigraphic context in which they are located. No indirect adverse effects would occur during operation of the Malabar Yard railroad improvements.

However, during construction of the Malabar Yard railroad improvements, even though the construction site would be off-limits to the general public, indirect effects during all phases of work may result from increased accessibility (rather than damage or destruction) by construction personnel to fossils buried in subsurface sediments through construction activities leading to potential resource looting or vandalism activities. Additionally, damage to improperly curated fossil specimens may occur. This is considered an adverse effect. Implementation of Malabar Yard Mitigation Measures PAL-1 through PAL-3 (described in Section 3.12.5) would avoid or minimize the potential for adverse indirect effects of the Malabar Yard railroad improvements on paleontological resources to occur by requiring development and implementation of a PMP, a WEAP training, and arrangements for curation of significant fossils. Therefore, with the implementation of Malabar Yard Mitigation Measures PAL-1 through PAL-3, no indirect adverse effect would occur.

3.12.5 Mitigation Measures

Implementation of the following mitigation measures would avoid or minimize potential adverse effects relative to cultural and paleontological resources. Mitigation measures for the Malabar Yard railroad improvements include “MY” in the nomenclature as shown below.

Cultural Resources

The following draft mitigation measures, specific to cultural resources, are provided in the *Link US Finding of Effect Report* (August 2023) as a starting point for discussion and would be fully

developed through Section 106 consultation and memorialized in a Programmatic Agreement, which will be completed prior to the issuance of a Record of Decision. Implementation of the following draft mitigation measures may avoid or minimize adverse effects to historic properties identified under NEPA.

Malabar Yard Mitigation Measure CUL-1 is proposed to resolve adverse effects on unidentified archaeological historic properties. This mitigation measure may require implementation before, during, or after construction of the undertaking, depending on the timing requirements of its individual components.

MY CUL-1 **Archaeological Treatment Plan (ATP).** Prior to construction, Metro shall retain a qualified archaeologist, herein defined as a person who meets the Secretary of Interior's Professional Qualification Standards in Archaeology and is experienced in analysis and evaluation of the types of material anticipated to be encountered, to develop an ATP that details the procedures to address accidental discoveries. The California SHPO and consulting Native American tribes shall be afforded 30 days to review and comment on the draft ATP, consistent with the timeline for consultation under Section 106 of the NHPA (36 CFR 800). Once relevant comments are addressed, the revised ATP shall be submitted to SHPO for 30-day review and concurrence.

The ATP shall be prepared consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP *Archaeological Resources Management Reports: Recommended Contents and Format* (OHP 1990).

The ATP shall include, at a minimum, the following elements:

- **Research Design:** The ATP shall include a robust research design to be used in applying the NRHP eligibility criteria for evaluating the significance of accidentally discovered archaeological features and deposits, and in recovering scientific data from those features and deposits that are determined to be significant. The research design shall discuss the results of previous archaeological research in the Los Angeles Basin, present research questions relevant to the types of features and deposits that are expected to be encountered and outline the data requirements necessary to successfully address the research questions.
- **Archaeological and Native American Monitoring.** The ATP shall include the locations and protocols to be used for archaeological and Native American monitoring during construction based on final design. The ATP shall rely on OSHA requirements regarding the safety of monitoring locations and the potential for encountering contaminated soils or other hazards.
- **Provisions for the Accidental Discovery of Archaeological Features or Deposits.** The ATP shall include provisions for the accidental discovery of

archaeological features or deposits during construction. These provisions shall include stop-work protocols, notification procedures, and methodology for assessing the nature and significance of the find. If the feature or deposit is determined to be significant, the data recovery and analysis procedures outlined for known resources shall be implemented.

- **Provisions for the Accidental Discovery of Human Remains, Associated and Unassociated Funerary Objects, Sacred Objects, and Objects of Cultural Patrimony.** The ATP shall contain provisions for the accidental discovery of human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony. These provisions shall include stop-work protocols, notification procedures, and provisions for the treatment (including reburial in an appropriate location) of the human remains and associated objects in a respectful manner and in accordance with applicable regulations, as determined through consultation with the appropriate Native American tribes.
- **Cultural Resource Worker Environmental Awareness Program (WEAP) Training.** The ATP shall include provisions for the development of cultural resource WEAP training to be delivered by a qualified archaeologist to all ground-disturbing construction personnel, including education on the consequences of unauthorized collection of artifacts, a review of discovery protocols, and explanation of mitigation requirements for work in archaeologically sensitive areas.
- **Standards for Reporting.** The ATP shall include standards for reporting the results of archaeological testing, evaluation, data recovery, and monitoring activities. All reports shall be consistent with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation and the California OHP's *Archaeological Resources Management Reports: Recommended Contents and Format*.
- **Guidelines for Curation.** The ATP shall include guidelines for the ownership and curation of archaeological data and collections, in compliance with 36 CFR 79.

Paleontological Resources

Implementation of the following mitigation measures would avoid or minimize potential adverse effects on paleontological resources for the Malabar Yard railroad improvements.

MY PAL-1 **Paleontological Mitigation Plan (PMP).** It is possible that Quaternary older alluvium or Puente Formation, which are geologic units that have a high paleontological potential, will be impacted during construction if excavation activities extend to depths as shallow as 6 feet below the natural ground surface. Metro shall retain a qualified paleontologist to prepare a PMP using final

excavation plans to determine where these geologic units would be impacted. Metro shall implement the PMP prior to the start of any ground-disturbing construction activities if it is determined that such activities would encounter Quaternary older alluvium or Puente Formation. The PMP shall include site-specific mitigation recommendations and specific procedures for construction monitoring and fossil discovery.

The PMP shall include a requirement for full-time paleontological monitoring if excavations will occur within native Quaternary older alluvium and/or Puente Formation, with the exception of pile-driving activities. While pile-driving activities for foundation construction may impact paleontologically sensitive sediments due to the need for foundations to be within firm strata, this activity is not conducive to paleontological monitoring, as fossils would be destroyed by the construction process. Monitoring is not recommended for excavations that affect only artificial fill and Quaternary younger alluvium (Qa/Qal).

The PMP shall detail a discovery protocol in the event that potentially significant paleontological resources are encountered during construction. For example, the contractor shall halt activities in the immediate area (within a 25-foot radius of the discovery) and Metro's qualified paleontologist shall make an immediate evaluation of the significance and appropriate treatment of the encountered paleontological resources in accordance with the PMP. If necessary, appropriate salvage measures and mitigation measures shall be developed in consultation with the responsible agencies and in conformance with federal and state guidelines and best practices. Construction activities may continue in other areas of the Project site while evaluation and treatment of the discovered paleontological resources take place. Work may not resume in the discovery area until it has been authorized by Metro's qualified paleontologist.

MY PAL-2 **Paleontological WEAP Training.** Metro's qualified paleontologist shall prepare paleontological resource-focused WEAP training that shall be delivered to all ground-disturbing construction personnel, including a review of protocols to follow in the event of a fossil discovery, as identified in the PMP.

MY PAL-3 **Curation.** Metro shall arrange for the curation in perpetuity of significant fossils recovered during construction at an accredited repository, such as the Natural History Museum of Los Angeles County. These fossils shall be prepared, identified, and catalogued for curation (but not prepared for a level of exhibition) by Metro's qualified paleontologist. This includes removal of all or most of the enclosing sediment to reduce the specimen volume, increase surface area for the application of consolidants or preservatives, provide repairs and stabilization of fragile or damaged areas on a specimen, and allow taxonomic identification of the fossils. All field notes, photographs, stratigraphic sections, and other data

associated with the recovery of the specimens shall be deposited with the institution receiving the specimens.

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3.13 Economic and Fiscal Impacts

This section provides an evaluation of potential economic and fiscal impacts on local and regional economies that may result upon implementation of the Malabar Yard railroad improvements. Economic indicators considered in this analysis include employment, earnings, output, value added, and tax revenues. Information contained in this section should not be used to make investment decisions.

3.13.1 Regulatory Framework

Table 3.13-1 identifies and summarizes applicable laws, regulations, and plans relevant to economic and fiscal issues.

Table 3.13-1. Applicable Laws, Regulations, and Orders

Law, Regulation, or Order	Description
Federal	
Federal Railroad Administration, Procedures for Considering Environmental Impacts Sec. 14(n)(16), 64 Federal Register 28545-28556 (1999)	FRA's Procedures for Considering Environmental Impacts require the draft and final EIS to include an assessment to determine potential adverse effects related to the socioeconomic environment, including the number and kinds of available jobs, the potential for community disruption and demographic shifts, the need for and availability of relocation housing, effects on commerce, including effects on existing businesses, metropolitan areas, and effects on local government services and revenues.
State	
California Relocation Assistance Act	The California Relocation Assistance Act includes requirements for just compensation for real property. Owners of private property have federal and state constitutional guarantees that their property will not be taken for public use or damaged unless they first receive just compensation. Just compensation is measured by the fair market value of the acquired property.
Local	
Metro's Relocation Assistance Program	Metro's Relocation Assistance Program provides compensation to property owners for the purchase or use of their property and tenants may be eligible for relocation benefits to help displaced households or businesses.

Notes:
EIS=environmental impact statement; FRA=Federal Railroad Administration;

3.13.2 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the Malabar Yard railroad improvements would affect:

- Employment, income, or tax revenues.

Geographic Study Area

The City of Vernon and Census Tract 5324 (now Census Tract 9800.16 based on 2020 redistricting) were used to characterize the affected environment. However, for the purposes of evaluating economic and fiscal impacts, the County of Los Angeles was used because economic impact analyses are very rarely conducted at the sub-county level. The Project footprint for the design options considered was used to determine where potential job displacement and lost property tax revenues would occur due to ROW acquisitions.

Methodology

The economic and fiscal impact analysis for the Malabar Yard railroad improvements involved the estimation of three types of effects, commonly referred to as direct, indirect, and induced effects:

- **Direct Effects** – economic activity occurring as a result of direct spending by businesses or agencies (e.g., direct spending on construction);

- **Indirect Effects** – economic activity resulting from purchases by local firms who are the suppliers to the directly affected businesses or agencies (e.g., spending by suppliers of the contractor responsible for individual components); and,

- **Induced Effects** – the increase in economic activity, over and above the direct and indirect effects, associated with increased labor income that accrues to workers (of the contractor and all suppliers) and is spent on household goods and services purchased from businesses.

The total economic impact is the sum of the direct, indirect, and induced effects occurring due to the Malabar Yard railroad improvements. The indirect and induced effects are sometimes referred to as multiplier effects since they can make the total economic impact substantially larger than the direct effect alone.

To estimate the economic impacts of the Malabar Yard railroad improvements, the IMPLAN® input-output model was used. The IMPLAN® data files include transaction information (intra-regional and import/export) on 536 industrial sectors (corresponding to four and five digit North American Industry Classification System codes) and data on more than 20 different economic variables, including industry output and labor income. For this study, the IMPLAN® model was populated with 2015 data for Los Angeles County. IMPLAN® multipliers were used to calculate the direct, indirect, and induced economic impacts of the capital expenses for the Malabar Yard

railroad improvements. Spending is entered into the IMPLAN® model in year-of-expenditure dollars, and results are converted to constant 2019 (year of analysis) dollars by the IMPLAN® model using the gross domestic product deflator. This is done to ensure that the results are comparable (and additive) to the analysis results for the infrastructure improvements proposed as part of the Build Alternative at and around LAUS in the City of Los Angeles.

Economic impacts are measured in terms of industry output, value added, employment, and tax revenue (at the federal and state/local levels). While output refers to the total volume of sales, value added refers to the value a company adds to a product or service. It is measured as the difference between the amount a company spends to acquire it and its value at the time it is sold to other users. Thus, value added can be thought of as a measure of the contribution to the gross domestic product made by an establishment or an industry. The total value added within a region is equivalent to the gross regional product and consists of compensation of employees, taxes on production and imports less subsidies, and gross operating surplus.

With respect to employment, two impact metrics are calculated: labor income and jobs. Labor income includes employee compensation and proprietor income. Employee compensation consists of wage and salary payments as well as benefits (health, retirement, etc.) and employer paid payroll taxes (employer side of social security, unemployment taxes, etc.). Proprietor income consists of payments received by self-employed individuals (such as farmers and painters) and unincorporated business owners. The job impact measures the number of jobs created for a full year. Unless specified otherwise, these jobs should not be interpreted as full-time equivalent jobs as they reflect the mix of full- and part-time jobs that is typical for each sector. Additionally, they should not be interpreted as long-term jobs either, but rather as job-years. Since the analysis is done on an annual basis, 1 job-year can be defined as 1 person employed for 1 year, whether part-time or full-time.

Additionally, an assessment was conducted of the potential impacts on fiscal (government) revenues as tax-generating properties are taken off the assessor roll (due to ROW acquisition) to accommodate the Malabar Yard railroad improvements. Property acquisitions would result in the following long-term effects:

- Property tax revenue losses to the county and local jurisdictions in which the land parcels acquired are located; and
- Job losses as businesses on the acquired parcels might close down permanently or relocate outside of Los Angeles County.

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects is presented below.

Economic effects can either be beneficial or adverse. Economic effects may be beneficial due to an increase in economic activity from direct spending on construction, addition of jobs, and

generation of federal, state, and local tax revenues. Adverse economic effects may result if businesses on acquired parcels are not able to be relocated resulting in loss of property tax revenues, sales tax revenues, and employment. Note, however, that the impact on sales tax revenues cannot be estimated with any certainty as other businesses in the Malabar Yard study area would pick up some of the sales lost by affected businesses.

3.13.3 Affected Environment

The Malabar Yard study area is located approximately 3 miles south of LAUS in the City of Vernon, California. The City of Vernon is an industrial city of 5.2 square miles. The existing land uses within the Malabar Yard study area consist of industrial and mixed commercial uses, transportation-railroad uses, as well as communications and utilities-related uses. Existing businesses in the area include warehouses, wholesale and distribution services, and other commercial enterprises. Note that the most recent information available at the time of the analysis is used to describe the affected environment, therefore it may reflect different years.

Main Economic Sectors

Based on the U.S. Census Bureau, in 2018, the primary jobs by industry sector in the City of Vernon were manufacturing (43.4 percent), wholesale trade (30.8 percent), and transportation and warehousing (9.8 percent) (U.S. Census Bureau 2020). The primary jobs by industry sector in Census Tract 5324 in 2018 were similar to the city, with manufacturing comprising 43.6 percent of the total jobs, followed by wholesale trade at 31.0 percent, and transportation and warehousing at 9.8 percent (U.S. Census Bureau 2020).

Employment

Based on the U.S. Census Bureau, in 2018 there were a total of 39,542 jobs in the City of Vernon (U.S. Census Bureau 2020). Of the total 39,542 jobs in the city, 39,126 jobs were contained in Census Tract 5324 (98.9 percent), which covers 92 percent of the City's land area.

According to the State of California Employment Development Department, the unemployment rate in the City of Vernon, as of October 2020 (not seasonally adjusted), was 6.4 percent (State of California Employment Development Department 2020). The State of California Employment Development Department does not have unemployment data at the census tract level; therefore, the unemployment rate for Census Tract 5324 is not provided.

Income

Based on the U.S. Census Bureau's 2021 American Community Survey 5-year estimates, the median household income in the City of Vernon was $62,000 (U.S. Census Bureau 2021b).

Tax Revenue

In 2021, property and parcel taxes collected in the City of Vernon amounted to a combined $19.4 million. This represented a 7.1 percent increase over 2020. From 2013 to 2021, property and parcel tax collections have increased by 5.3 percent annually, on average (City of Vernon 2022).[1]

Land Use

As discussed in 3.2, Land Use and Planning, most of the properties within the footprint for Malabar Yard railroad improvements are zoned for industrial/manufacturing or commercial use; no residential buildings are within the limits of the Malabar Yard footprint. Substantial public outreach was performed to identify the types of businesses within the affected environment.

3.13.4 Environmental Consequences

No Action Evaluation

The following topic was evaluated to determine potential effects if the Malabar Yard railroad improvements in the City of Vernon were not implemented in conjunction with the Build Alternative.

Employment, Income, and Tax Revenues

If the Malabar Yard railroad improvements were not implemented, there would be no loss in jobs or property taxes due to business displacement. However, there would also be no economic impacts from construction spending, jobs, tax revenues, and labor income. Therefore, no direct or indirect effects would occur.

Evaluation of Malabar Yard Railroad Improvements

TOPIC 3.13-A	Employment, income, and tax revenues

The structure of this evaluation differs slightly from those of the other disciplines included in this document. As explained in Section 3.13.2, the economic impacts calculated for this study are based on economic multipliers derived from IMPLAN® and consist of direct effects (economic activity resulting from direct spending by businesses or agencies), indirect effects (economic activity resulting from purchases by local firms who are the suppliers to the directly affected businesses or agencies), and induced effects (economic activity associated with increased labor

[1] In California, sales and use taxes are administered by the California Department of Tax and Fee Administration and applied as a base percentage rate (currently 7.25 percent) plus any local and district tax. The amount of taxes collected annually at the county or city level is not published and cannot be estimated accurately. Also, as mentioned in the Methodology section, the impact of Malabar Yard Railroad Improvements on sales tax revenues cannot be estimated with any certainty as other businesses in the Malabar Yard study area would pick up some of the sales lost by affected businesses.

income that accrues to workers). The total economic impact is the sum of the direct, indirect, and induced effects. Therefore, this report presents these effects together, rather than in separate sections.

49th Street Closure and 46th Street Connector Design Option 1

Construction

Design Option 1 for the Malabar Yard railroad improvements at both locations (46th Street and 49th Street) would require ROW acquisitions of industrial/manufacturing properties.[2] The Malabar Yard railroad improvements (Design Option 1 at both locations) are expected to result in the displacement of existing businesses on three parcels (APNs 6308-004-011, 6308-004-012 and 6308-004-013). The three parcels where job displacement would occur are shown in Table 3.13-2 and are classified as industrial properties. Overall, it is estimated that the ROW acquisitions required would displace approximately 48,872 square feet of building space.[3] These ROW acquisitions may result in some property tax losses to the county and city, as well as job losses. It is expected that up to 46 jobs[4] could be displaced, and property taxes[5] would decrease by $61,001 approximately every year. These impacts would be permanent. As mentioned previously, the impact on sales tax revenues cannot be estimated with any certainty.

Businesses subject to displacement would be referred to potential and/or suitable replacement sites pursuant to Metro's Relocation Assistance Program. Given that there is available land within and surrounding the Malabar Yard study area and that industrial businesses may not be dependent on local patronage, some relocation of businesses could be assumed.

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[2] Note that government-owned and vacant parcels are not considered in the economic and fiscal analysis, as this analysis considers the potential for lost tax revenues.

[3] For the non-vacant partial acquisitions, displaced building square feet were estimated by applying a 'percent acquisition factor' of 100 percent, 25 percent, or 0 percent to the total building square feet of each parcel, depending on the area of the parcel to be acquired (full acquisition, partial acquisition affecting building square footage, and partial acquisition not affecting building square footage, respectively).

[4] Number of displaced jobs was estimated based on the total building square footage displaced (48,872) and the average building square feet per industrial job (1,061.5) from the right-of-way (ROW) acquisitions.

[5] For the non-vacant partial acquisitions, lost property taxes were estimated by applying the 'percent acquisition factor' to the assessed property tax value of each parcel.

Table 3.13-2. List of Potentially Affected Parcels with Job Displacement (Design Option 1)

Assessor's Parcel Number, Address, and Business Name)	Property Owner	Type of Acquisition	Improvement Value	Land Value	Property Tax	Building Square Footage	Lot Square Footage
Industrial/Manufacturing Land Uses							
6308-004-011 (4600 Pacific Boulevard - Building Vacant)	Jones Jeremy; Noble Donna	Full	$106,434	$66,346	$3,641	9,711	12,903
6308-004-012 (4618 Pacific Boulevard - Flores Design Fine Furniture)	Guerra Family Trust	Partial	$1,673,191	$2,026,210	$53,710	42,870	115,957
6308-004-013 (4662 Leonis Boulevard - Arcadia Window and Door Manufacturing)	Alpine Leons LLC	Partial	$5,120,400	$8,139,600	$175,730	113,773	199,548

Source: Nite Owl 2019.

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There are some short-term beneficial effects anticipated from the Malabar Yard railroad improvements due to Project spending. The estimated cost of Design Option 1 is approximately $27 million (BNSF 2020), inclusive of construction, ROW acquisition, design support and construction management, and all contingencies. However, not all costs should be considered in the economic impact analysis. In particular, ROW acquisition costs were excluded, since selling a property is considered a transfer of an asset between two entities and there is no substantial economic activity associated with a transfer. Also, economic leakage is considered by excluding costs that will occur outside the study area. For instance, exports from, and imports to, Los Angeles County are accounted for in the estimation of indirect and induced impacts through the IMPLAN® National Trade Flows model. After these adjustments, total spending applied towards economic impacts is $16.0 million.

Based on the breakdown of spending on construction and professional services within the 10 Percent Design Cost Estimate (BNSF 2020), these spending categories were matched to the corresponding IMPLAN® sectors. Table 3.13-3 shows the different IMPLAN® sectors used to conduct the analysis.

Table 3.13-3. IMPLAN® Sectors

Sector Code	Sector Description
51	Water, sewage, and other systems
54	Construction of new power and communication structures
58	Construction of other new nonresidential structures
313	Other electronic component manufacturing
388	Sign manufacturing
438	Insurance agencies, brokerages, and related activities
439	Funds, trusts, and other financial vehicles
449	Architectural, engineering, and related services
N/A	Institutional spending pattern (state/local government non-education)

Source: IMPLAN® Full-Time equivalent and Employee Compensation Conversion Table

Construction is expected to take 18 months; however, with no detailed spending schedule currently available, the economic impact analysis assumes all construction spending occurs in year 2023.[6] This spending would result in beneficial short-term impacts, including direct (Project

[6] This is the assumption that was used at the time of the analysis (2020). Note that using 2024 or 2025 would not affect the magnitude of the economic impacts and therefore the conclusions of the analysis.

spending), indirect (supply-chain spending), and induced (employee spending) effects. These beneficial impacts are summarized in Table 3.13-4, broken down by impact metric (i.e., output, value added, labor income, and employment). Note that all dollar amounts are expressed in millions of 2019 dollars. Design Option 1 is expected to generate 143 temporary jobs (representing $9.4 million in labor income) during the construction period. It is expected to create $25.6 million in output (including $13.8 million in value added) and $3.3 million in total federal, state, and local tax revenues. During construction, a beneficial economic effect would occur because the Malabar Yard railroad improvements would generate employment, labor income, and tax revenues.

Table 3.13-4. Construction Economic Impacts from Design Option 1
($2019 Million)

Impact Metric	Direct	Indirect	Induced	Total
Output	$15.8	$4.6	$5.2	$25.6
Value added	$7.9	$2.7	$3.2	$13.8
Labor income	$5.8	$1.7	$1.8	$9.4
Employment (job-years)	84	24	35	143
Taxes	$3.3			

Operations

Implementation of Malabar Yard railroad improvements Design Option 1 at both locations is not expected to result in long-term impacts on employment, income, and tax revenues. No additional employees would be required during operations, and no incremental operations and maintenance costs are anticipated. Therefore, no direct or indirect effect would occur.

49th Street Closure and 46th Street Connector Design Option 2

Construction

Design Option 2 would require fewer ROW acquisitions because the alignment is shifted northward within the road ROW; however, Design Option 2 would still affect industrial/manufacturing properties. The Malabar Yard railroad improvements (Design Option 2 at both the 46th and 49th Street locations) are expected to result in the demolition of one building on APN 6308-004-011 and the displacement of 9,711 square feet of building space resulting in $3,641 of property tax losses to the county and city annually. Up to nine jobs[7] could be displaced.

[7] Number of displaced jobs was estimated based on the total building square footage displaced and the average building square feet per job from the ROW acquisitions.

These impacts would be permanent. As mentioned previously, the impact on sales tax revenues cannot be estimated with any certainty.

As discussed above under the impacts for Design Option 1, businesses subject to displacement would be referred to potential and/or suitable replacement sites pursuant to Metro's Relocation Assistance Program. Given that there is available land within and surrounding the Malabar Yard study area and that industrial businesses may not be dependent on local patronage, some relocation of businesses could be assumed.

Table 3.13-5. Potentially Affected Parcel with Job Displacement (Design Option 2)

Assessor's Parcel Number, Address, and Business Name	Property Owner	Type of Acquisition	Improvement Value	Land Value	Property Tax	Building Square Footage	Lot Square Footage
Industrial/Manufacturing Land Uses							
6308-004-011 (4600 Pacific Boulevard - Building Vacant)	Jones Jeremy; Noble Donna	Full	$106,434	$66,346	$3,641	9,711	12,903

Source: Nite Owl 2019

There are some short-term beneficial effects anticipated from the Malabar Yard railroad improvements due to Project spending. The estimated cost of Design Option 2 is approximately $19.9 million (BNSF 2021), inclusive of construction, ROW acquisition, design support and construction management, and all contingencies. After adjusting the costs to exclude ROW acquisition and economic leakage costs, total spending applied towards economic impacts is $17.0 million.

Similar to Design Option 1, the economic impact analysis for Design Option 2 assumes all construction spending occurs in year 2023.[8] The same IMPLAN® sectors listed in Table 3.13-3 were also used. Construction spending would result in beneficial short-term impacts, including direct (Project spending), indirect (supply-chain spending), and induced (employee spending) effects. These beneficial impacts are summarized in Table 3.13-6, broken down by impact metric (i.e., output, value added, labor income, employment, and taxes). Note that all dollar amounts are expressed in millions of 2019 dollars. Design Option 2 is expected to generate 151 temporary jobs (representing $9.7 million in labor income) during the construction period. It is expected to

[8] This is the assumption that was used at the time of the analysis (2020). Note that using 2024 or 2025 would not affect the magnitude of the economic impacts and therefore the conclusions of the analysis.

create $27.1 million in output (including $14.5 million in value added) and $3.5 million in total federal, state, and local tax revenues. During construction, a beneficial economic effect would occur because the Malabar Yard railroad improvements would generate employment, labor income, and tax revenues.

Table 3.13-6. Construction Economic Impacts from Design Option 2
($2019 Million)

Impact Metric	Direct	Indirect	Induced	Total
Output	$16.8	$4.8	$5.4	$27.1
Value added	$8.3	$2.8	$3.3	$14.5
Labor income	$6.0	$1.8	$1.9	$9.7
Employment (job-years)	90	25	36	151
Taxes	$3.5			

Operations

Implementation of Malabar Yard railroad improvements Design Option 2 at both locations is not expected to result in long-term impacts to employment, income, and tax revenues. No additional employees would be required during operations, and no incremental operations and maintenance costs are anticipated. Therefore, no direct or indirect effect would occur.

3.13.5 Mitigation Measures

Construction and operation of any combination of design options for the Malabar Yard railroad improvements would not result in adverse economic effects. Therefore, no mitigation is required.

3.14 Safety and Security

This section provides an evaluation of the potential effects related to existing safety and security conditions that may result upon the implementation of the Malabar Yard railroad improvements. Information contained in this section is summarized from published sources and comments raised during the scoping process.

Safety concerns related to potentially hazardous conditions are also described and analyzed in other sections of this document, as follows:

- Section 3.3, Transportation, addresses emergency access and hazards due to design features.
- Section 3.9, Geology, Soils, and Seismicity, addresses seismic and geotechnical hazards.
- Section 3.10, Hazardous Waste and Materials, addresses hazardous materials and wastes from use or exposure to soil and groundwater contamination.

3.14.1 Regulatory Framework

Table 3.14-1 identifies and summarizes applicable laws, regulations, and plans relevant to safety and security.

Table 3.14-1. Applicable Laws, Regulations, and Plans for Safety and Security

Law, Regulation, or Plan	Description
Federal	
Federal Railroad Administration, Procedures for Considering Environmental Impacts Sec.14(n)(14, 17, and 18), 64 *Federal Register* 28545-28556 (1999)[1]	The FRA's Environmental Procedures require the draft and final EIS to assess impacts on the general mobility of the elderly and handicapped, as well as identify the level of protection afforded residents of the affected environment from construction and long-term operations. It should also discuss the potential for community disruption and impacts on local government services, as well as on public health and safety.
Rail Safety Improvement Act of 2008 (Public Law 110-432)	The RSIA reauthorized the FRA to oversee the nation's rail safety program in response to fatal rail accidents between 2002 and 2008. The RSIA required the implementation of PTC systems to prevent further train-to-train collisions along specific rail lines by the end of 2015. Additionally, the RSIA aims to improve conditions of rail bridges and tunnels. The RSIA governs hours of service for workers, standards for track inspection, conductor certification, and highway grade crossings.

[1] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

Table 3.14-1. Applicable Laws, Regulations, and Plans for Safety and Security

Law, Regulation, or Plan	Description
Federal Rail Administration (49 Code of Federal Regulations Volume 4, Chapter 2, Part 200 to 299)	FRA regulations for railroad transportation safety, including standards, rules, and practices, are listed in 49 CFR Volume 4, Parts 200 to 299. By law, FRA is responsible for promoting railroad safety nationwide and enforcing federally mandated safety standards.
Federal Railroad Administration System Safety Program Rule (49 Code of Federal Regulations 270)	According to 49 CFR 270, each railroad and passenger rail operation is subject to adopt and fully implement an SSP plan and shall be approved by the FRA. Each SSP plan outlines the definition of the passenger rail operation's authority for the establishment of the SSP plan and describes the safety philosophy and safety culture of the passenger rail operation.
United States Code on Railroad Safety (49 United States Code § 20101 et seq.)	Part A of Subtitle V of Title 49 of the USC (49 USC §§20101 et seq.) contains a series of statutory provisions affecting the safety of railroad operations. Section 20109 of the act protects the reporting of safety concerns and injuries and prohibits railroads from disciplining, discharging, or retaliating in any form against employees who engage in protected activities. This section also prohibits the delay or interference of an injured employee's treatment.
Department of Homeland Security/Transportation Security Administration (49 Code of Federal Regulations 1580)	Part 12580, Rail Transportation Security, codifies the Transportation Security Administration inspection program. It also includes security requirements for freight railroad carriers; intercity, commuter, and short-haul passenger train service providers; rail transit systems; and rail operations at certain fixed-site facilities that ship or receive specified hazardous materials by rail.
Emergency Planning and Community Right-to-Know Act (42 Code of Federal Regulations Part 116)	The objectives of the Emergency Planning and Community Right-to-Know Act are to allow state and local planning for chemical emergencies, provide for notification of emergency releases of chemicals, and address a community's right-to-know about toxic and hazardous chemicals.
Transportation Security Administration – Security Directives for Passenger Rail	Security Directives RAILPAX-01-01 and RAILPAX-04-02 require rail transportation operators to implement certain protective measures, report potential threats and security concerns to the Transportation Security Administration, and designate a primary and alternate security coordinator.
Homeland Security Act of 2002 (6 Code of Federal Regulations 101)	The Homeland Security Act of 2002 was signed into law on November 25, 2002 (Pub. L. 107-296) in response to the September 11, 2001, terrorist attacks (Department of Homeland Security 2012). The act brought together approximately 22 separate federal agencies to establish the Department of Homeland Security. The department's mission is to ensure the U.S. is safe, secure, and resilient against terrorism and other hazards.
Federal Railroad Administration Collision Hazard Analysis Guide (October 2007)	The Collision Hazard Analysis Guide identifies steps to be followed in completing comprehensive rail hazard analyses, including consideration for collisions, derailments, and other conditions that

Table 3.14-1. Applicable Laws, Regulations, and Plans for Safety and Security

Law, Regulation, or Plan	Description
	affect the safety of passengers. It also offers guidance on the development of effective hazard mitigation strategies.
State	
California Public Utilities Code Section 768	Under California Public Utilities Code Section 768, the CPUC may, after a hearing, require every public utility to construct, maintain, and operate its line, plant, system, equipment, apparatus, tracks, and premises in a manner to promote and safeguard the health and safety of its employees, passengers, customers, and the public. The CPUC may prescribe, among other things, the installation, use, maintenance, and operation of appropriate safety or other devices of appliances, including interlocking and other protective devices at grade crossings or junctions and block or other systems of signaling. The CPUC may establish uniform or other standards of construction and equipment and require the performance of any other act which the health or safety of its employees, passengers, customers, or the public may demand.
California Public Utilities Code (Sections 7710 to 7727)	The California Public Utilities Code Sections 7710 to 7727 cover railroad safety and emergency planning and response. Under this code, CPUC is required to adopt safety regulations and to report sites on surface transportation modes that are deemed hazardous within California.
California Public Utilities Code Section 7661 and 7665 (Local Community Rail Security Act of 2006)	Under California Public Utilities Code Section 7661 and Section 7665 (the Local Community Rail Security Act of 2006), every railroad corporation operating in California is required to develop, in consultation with, and with the approval of, the California Emergency Management Agency, a protocol for rapid communications with the agency, the California Highway Patrol, and designated county public safety agencies in an endangered area if there is a runaway train or any other uncontrolled train movement that threatens public health and safety
California Emergency Services Act (California Government Code § 8550 et seq.)	The California Emergency Service Act supports the state's responsibility to mitigate adverse effects of natural, human-produced, or war-caused emergencies that threaten human life, property, and environmental resources of the state. This includes acts of terrorism, hazardous materials spills, and transportation of hazardous materials.
Local	
Los Angeles County Operational Area Emergency Response Plan (2012)	The Los Angeles County Operational Area Emergency Response Plan addresses the Operational Area coordinated response to emergency situations associated with natural, man-made, and technological incidents. The Operational Area is defined as Los Angeles County and its political subdivisions. The objective of the plan is to integrate Operational Area resources to be an efficient organization capable of responding to emergencies using the National Incident Management System, Standardized Emergency Management System, mutual aid, and other appropriate response procedures.

Table 3.14-1. Applicable Laws, Regulations, and Plans for Safety and Security

Law, Regulation, or Plan	Description
	The emergency response plan includes the following assumptions and goals applicable to safety and security: • The Operational Area will coordinate resources to save lives and minimize injury to persons and damage to property and the environment. • County of Los Angeles, as the Operational Area Coordinator, will coordinate and facilitate emergency operations within the Operational Area. • Promote disaster-resistant future development. • Reduce the possibility of damage and losses to existing assets, particularly people and facilities/infrastructure.
Los Angeles County All-Hazard Mitigation Plan (2014)	The *Los Angeles County All-Hazard Mitigation Plan* sets strategies for coping with the natural and manmade hazards faced by residents. The plan is a compilation of information from county departments correlated with known and projected hazards that face Southern California. It addresses potential damages in the unincorporated portions of the county as well as to county facilities. The plan complies with, and has been approved by, FEMA and the Governor's Office of Emergency Services.
City of Vernon General Plan – Safety Element (2015)	GOAL S-1 Minimize the risk to public health, safety, and welfare associated with the presence of natural and human-caused hazards. • POLICY S-1.2: Cooperate with other jurisdictions in the southeast area of Los Angeles County to maintain an up-to-date emergency response system for the region. • POLICY S-1.4: Maintain the public water distribution and supply system facilities to provide adequate capacity to meet both every day and emergency fire-flow needs. GOAL S-2 Provide a high degree of protection for all residents and workers from hazardous materials and the hazards associated with transport of such materials. • POLICY S-2.2: Continue to require every business to maintain a list of the chemicals and other hazardous materials used or stored on site in accordance with appropriate material safety data sheets and otherwise in accordance with law, and to provide that list to the Fire Department and Environmental Health Department. Require that the Fire Department and Environmental Health Department to maintain a list of such materials and the location where they are stored or used to permit emergency personnel to respond appropriately, if required. GOAL S-3 Maintain high standards for the provision of City emergency services. • POLICY S-3.1: Establish and implement plans for continuity of government for Vernon in the event of a catastrophe.

Table 3.14-1. Applicable Laws, Regulations, and Plans for Safety and Security

Law, Regulation, or Plan	Description
	• POLICY S-3.2: Require businesses handling, transporting, or producing materials considered acutely hazardous to prepare contingency plans for accidents involving these chemicals. • POLICY S-3.3: Support the development and continued updating of public safety education programs. • POLICY S-3.5: Periodically review the City's emergency service equipment to determine if it is adequate to meet the needs of changing land uses and development types. • POLICY S-3.6: Require new development projects that necessitate the purchase of public safety equipment to underwrite or share in purchase costs. • POLICY S-3.7: Develop a new Emergency Operations Center with adequate space and facilities to respond to any emergency situation which may arise. • POLICY S-3.8: Continue to support the Vernon Fire Department in its effort to maintain its high rating. GOAL S-4 Provide a high degree of protection for all workers and residents in the event of any disaster. • POLICY S-4.1: Review the risks related to a possible train derailment or collision and develop appropriate response programs. • POLICY S-4.2: Review the design of new development projects to consider public safety and issues such as emergency access, defensible space, and overall safety. • POLICY S-4.3: Design and maintain an effective plan for the prompt evacuation of the city in the event of a dam inundation or other major disaster requiring the removal of workers or residents from Vernon. • POLICY S-4.4: Identify facilities for use as emergency/disaster shelters for those unable to leave or required to stay within the city in the event of a major disaster or emergency event.
City of Vernon Local Hazard Mitigation Plan (2022)	The City of Vernon's LHMP allows public safety officials and city staff, elected officials, and members of the public to understand and prepare for threats from natural and human-caused hazards in the community. The LHMP recommends specific actions to proactively decrease the potential threats before disasters occur.

Table 3.14-1. Applicable Laws, Regulations, and Plans for Safety and Security

Law, Regulation, or Plan	Description
City of Vernon Standardized Emergency Management System Multi-Hazard Functional Plan	The City of Vernon's Standardized Emergency Management System Multi-Hazard Functional Plan discusses and contains programs and plans for emergency services to safety concerns in the city. This plan includes pre-emergency preparedness plans and programs for mutual aid between organizations for emergency situations.

Notes:
CFR=Code of Federal Regulations; CPUC=California Public Utilities Commission; EIS=Environmental Impact Statement; FEMA=Federal Emergency Management Agency; FRA=Federal Railroad Administration; LHMP=Local Hazard Mitigation Plan; PTC=Positive Train Control; RSIA=Rail Safety Improvement Act; SSP=System Safety Program; USC=United States Code

3.14.2 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the Malabar Yard railroad improvements would affect:

- Community safety services;
- Safety conditions; and/or,
- Security conditions.

Geographic Area Considered

The Malabar Yard study area plus a 0.5-mile buffer is used to characterize the affected environment and the geographic area considered to determine potential effects related to safety and security and includes the Project footprint for the design options considered, City of Vernon, and Los Angeles County.

Methodology

Safety and security of railroad facilities falls under the jurisdiction of various federal, state, and local agencies, including the National Transportation Safety Board (NTSB), FRA, and CPUC. Within the Malabar Yard study area, BNSF is responsible for the safety and security of its facilities in compliance with NTSB, FRA, and CPUC regulations. BNSF is also responsible for developing and implementing health and safety policies for the protection of its employees.

Comments Received During Scoping

The following issues of concern were raised by the public and stakeholders during scoping of the Revised NOI released on September 17, 2020, and are addressed in this section (details can be found in Chapter 7, Public and Agency Outreach):

- Traffic congestion potentially affecting future ingress and egress of vehicles;
- Safety enhancements for crossings at the intersection of 46th Street and Seville Avenue; and
- Implementation of the cul-de-sac being conducive to dumping and other nuisance issues.

Determination of Effects

Based on the affected environment for the geographic area considered, and in consideration of both context and intensity as outlined in 40 CFR 1508.27, the methodology to determine effects for each of the topics considered is presented below.

Community Safety Services

The City of Vernon Police Department website, Los Angeles County Fire Department website, and the City of Vernon General Plan were reviewed to determine the location and service areas of fire stations, police stations, and other emergency providers that serve the Malabar Yard study area. These resources were also reviewed to evaluate how community safety service providers could be affected by construction and operation of the Malabar Yard railroad improvements. Project-related effects would be considered adverse if the Malabar Yard railroad improvements affect service ratios, response times, or performance objectives of emergency responders.

Safety Conditions

Safety conditions were assessed by determining the likelihood for changes relative to the following during construction or operation of the Malabar Yard railroad improvements.

- Pedestrian and bicyclist safety; and
- Train accidents/incidents[2] including within at-grade railroad crossings.

[2] According to the FRA's definition of accident/incident in 49 CFR 225.5, accident/incident means (1) any impact between railroad on-track equipment and a highway user at a highway/rail grade crossing; (2) any collision, derailment, fire, explosion, act of God, or other event involving the operation of railroad on-track equipment, whether standing or moving, that results in reportable damages greater than the current reporting threshold to railroad on-track equipment, signals, track, track structures, and roadbed; (3) each death, injury, or occupational illness that is a new case and meets the general reporting criteria listed in 49 CFR 225.19(d)(1) through (d)(6) concerning an event or exposure arising from the operation of a railroad is a discernable cause of the resulting condition or a discernable cause of a significant aggravation to a preexisting injury or illness. The event or exposure arising from the operation of a railroad need only be one of the discernable causes; it need not be the sole or predominant cause.

Pedestrian and Bicyclist Safety

A safety assessment was performed to identify existing conditions for pedestrians and bicyclists in the Malabar Yard study area. The safety assessment focused on pedestrian/bicycle safety conditions near the existing rail alignment and at designated at-grade crossings where the Malabar Yard railroad improvements would occur. Pedestrian and bicycle safety analysis factors included the location of existing sidewalks, designated bicycle facilities, and the presence of existing and proposed safety features (signage, activated warnings, gates, flashing lights, etc.) in the vicinity of at-grade crossings within the limits of the Project footprint for the design options considered. The FRA's *Collision Hazard Analysis Guide: Commuter and Intercity Passenger Rail Service* (2007) was reviewed to identify characteristics of the railroad improvements that would potentially elevate risk to pedestrians and bicyclists' safety.

Project-related effects would be considered adverse if the Malabar Yard railroad improvements exposes pedestrians and bicyclists to safety hazards resulting from temporary road closures and detours which could affect access and place them in close proximity to heavy construction equipment. Operationally, effects would be considered if the Malabar Yard railroad improvements create a potential for train-to-train collisions and other accidents/incidents involving pedestrians, bicyclists, or vehicles, or derailment.

Train Accidents/Incidents including within At-Grade Railroad Crossings

To determine existing conditions, the number of incidents (train collisions or derailments) within the Malabar Yard study area was tabulated. Data was gathered from the California Office of Traffic Safety to determine the existing number of vehicle, pedestrian, and bicycle collisions within the City of Vernon and County of Los Angeles. The FRA's Office of Safety Analysis website was also reviewed to identify railroad safety information including accidents and incidents, inventory and highway-rail crossing data in the Malabar Yard study area. Operational and infrastructure safety conditions within the Malabar Yard study area were evaluated to determine if the Malabar Yard railroad improvements would potentially increase the number of rail accidents and incidents or increase safety hazards for the at-grade crossings within the limits of the Project footprint for the design options considered.

Project-related effects would be considered adverse if the Malabar Yard railroad improvements increase the number of rail accidents and incidents or increases safety hazards within at-grade railroad crossings posing a potential safety hazard to drivers, pedestrians, bicyclists, passengers, and workers.

Security Conditions

Security refers to prevention of acts defined as unlawful, criminal, or intended to bring harm to another person or damage property. The Malabar Yard railroad improvements were evaluated to determine security conditions resulting from increased or new crime risks that could occur during construction and operation.

The Federal Bureau of Investigation's (FBI) Crime Data Explorer was reviewed to identify crime rate statistics in the City of Vernon from 2009-2019 and to identify potential crime issues in the Malabar Yard study area (FBI 2023). Collected crime data provides the baseline for evaluating potential impacts of the Malabar Yard railroad improvements.

Project-related effects would be considered adverse if the Malabar Yard railroad improvements are not designed properly to minimize or mitigate for security risks, such as theft of equipment and materials, vandalism, and trespassing.

3.14.3 Affected Environment

Community Safety Services

Community safety services include fire protection, law enforcement, and emergency medical services. Figure 3.14-1 depicts the location of these community safety services within a 0.5-mile buffer of the Malabar Yard study area.

Fire Protection

Fire protection services within the Malabar Yard study area were previously provided by the City of Vernon Fire Department. As of October 21, 2020, the City of Vernon transitioned all fire protection, paramedic, and incidental services to the Consolidated Fire Protection District of Los Angeles County commonly known as the Los Angeles County Fire Department (LACOFD).

As depicted on Figure 3.14-1, there is one fire station located within 0.5 mile of the Malabar Yard study area. Fire Station 52 (previously Vernon Fire Station 77) located at 4301 South Santa Fe Avenue. The average response time for emergency calls prior to 2020 was 3 minutes (Vernon Chamber of Commerce 2020).

Law Enforcement

Law enforcement services within the Malabar Yard study area are provided by the City of Vernon Police Department, and BNSF Railroad Police have jurisdiction on BNSF property.

As depicted on Figure 3.14-1, there is one police station located within 0.5 mile of the Malabar Yard study area. The Vernon Police Department is located at 4305 South Santa Fe Avenue. The average response time for Priority 1 calls was 3 minutes and 14 seconds in 2016 (City of Vernon 2016).

BNSF Railroad Police is the law enforcement division of the BNSF Resource Protection team. Railroad police are provided police authority from state and local governments and are authorized with interstate authority by the federal government. The BNSF jurisdiction is 32,500 miles long and 100 feet wide, crisscrossing hundreds of local and state jurisdictions, including Malabar Yard in the City of Vernon. Railroad Police are active in all forms of police duties. BNSF Railroad Police analyze statistical data to discover crime trends, use K-9 units and proactive uniformed patrol to combat trespassing and cargo thefts, and actively participate with other police agencies to investigate crimes committed on railroad property.

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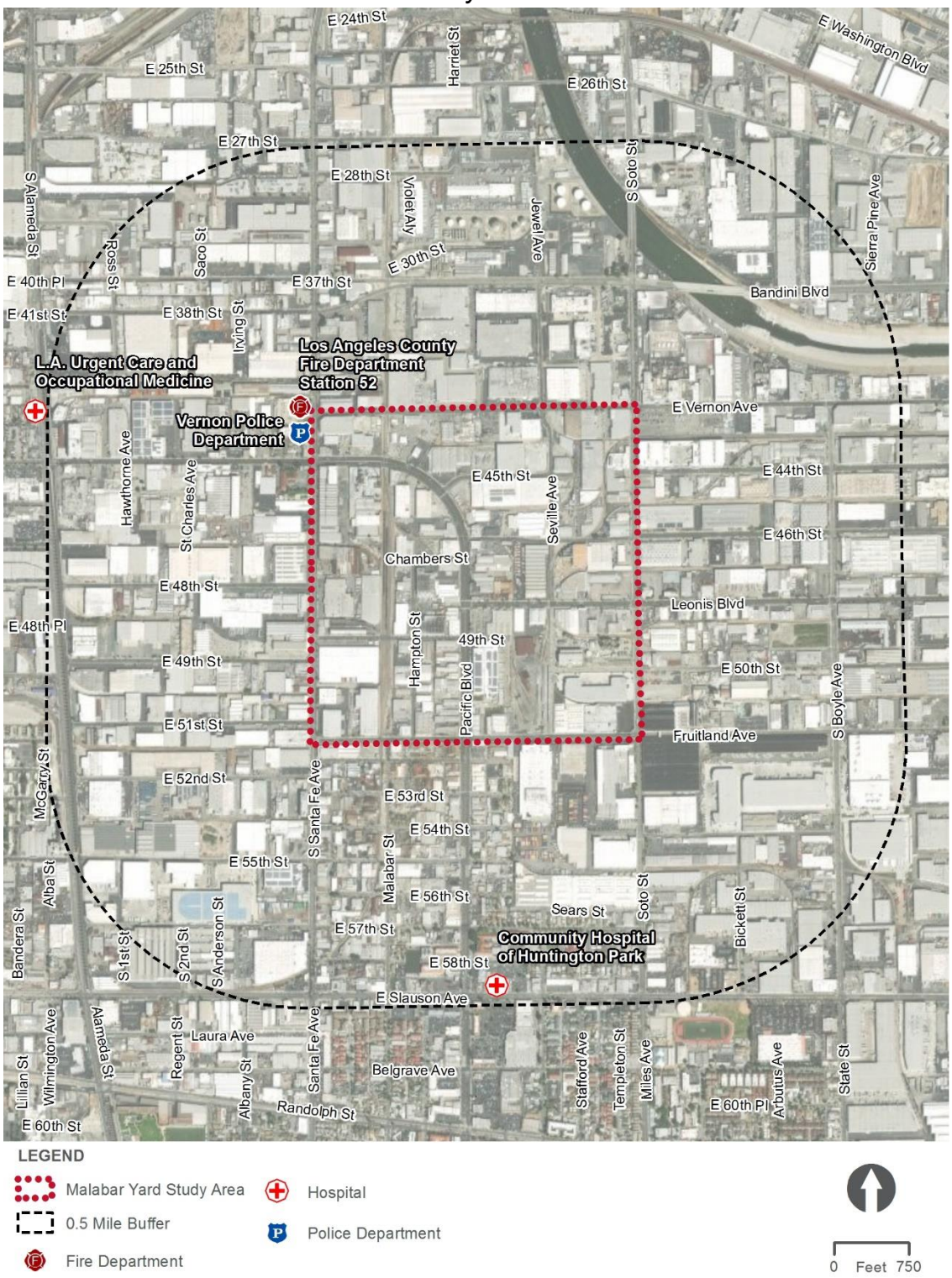
Figure 3.14-1. Community Safety Service Facilities within 0.5 mile of the Malabar Yard Study Area



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Emergency Medical Services

In 2020, the City of Vernon contracted fire protection and emergency medical protection services with the LACOFD, which resulted in the Vernon Fire Department being disbanded in October 2020. The closest hospital and emergency medical facility to the Malabar Yard railroad improvements is the Community Hospital of Huntington Park at 2623 East Slauson Avenue and the LA Urgent Care and Occupational Medicine at 4221 South Alameda Street in Vernon.

Emergency Response Plans

The City of Vernon has prepared emergency operations goals and policies in their General Plan in addition to the LHMP (City of Vernon 2022) which recommends specific actions to proactively decrease the potential threats before disasters occur. The City of Vernon released a Draft LHMP in September 2022.

Safety Conditions

Existing conditions regarding train accidents/incidents and pedestrian and bicyclist safety are described below.

Train Accidents/Incidents

The FRA defines total accidents/incidents as the sum of train accidents, roadway/highway-rail incidents, and other incidents. Each of these terms are defined as described below.

- Train accidents are defined as a safety-related event involving on-track equipment and a highway user at a roadway/highway-rail grade crossing, whether standing or moving, including derailments and collisions (FRA 2014).
- Roadway/highway-rail incidents are defined as any impact between railroad on-track equipment and roadway/highway users (including motorists, bicycles, pedestrians, or any other mode of surface transportation) that result in injuries or fatalities (casualties) but not involving property damage above reportable thresholds (FRA 2014).
- Other incidents include any event other than a roadway/highway-rail incident that caused a death, injury, or occupational illness to a railroad employee, or that resulted in an injury or fatality, including incidents involving pedestrians in the railroad ROW (FRA 2014).

FRA maintains data related to rail accidents and incidents, including injuries and causes. The most common type of accident in Los Angeles County for freight is in-yard derailments caused by human error. Between January 2009 and January 2018, there were a total of 154 accidents involving Class I Freight Railroads (FRA 2018). All of these accidents and incidents occurred outside of the Malabar Yard study area. There have been no reported rail accidents at the Malabar Yard since January 2009.

Existing At-Grade Intersection Conditions

In 2018, California ranked second for most highway-rail grade crossing incidents in the nation and second for roadway/highway-rail grade crossing fatalities (FRA 2018). Based on 2019 data from FRA, there were 122 roadway/highway-rail grade crossing incidents in Los Angeles County from January 2014 to December 2018. Four of those incidents occurred within the City of Vernon during the time period mentioned above, though none occurred within the Malabar Yard study area (FRA 2018).

The FRA at-grade crossing identification numbers for the four existing at-grade crossings located along 46th Street and 49th Street, where the Malabar Yard railroad improvements are located (as shown on Figure 3.14-2), are as follows:

- **49th Street** – At-Grade Crossing No. 027933G
- **Pacific Boulevard/46th Street intersection** – At-Grade Crossing No. 027921M
- **46th Street east of Seville Avenue** – At-Grade Crossing No. 860188C
- **Seville Avenue south of 46th Street** – At-Grade Crossing No. 860185G

Intersections near the at-grade crossings are either signalized or stop-controlled with a stop sign. Because of the urban nature of the Malabar Yard study area, most of these intersections have marked crosswalks for safe pedestrian movement or sidewalks that meet ADA standards.

Table 3.14-2 lists the physical characteristics, types of passive control devices, and types of train activated warning devices at each of the four at-grade crossings.

FRA accident data for the four at-grade crossings where the railroad improvements would occur indicate that there has been one accident in the past 45 years. The one accident involved a pedestrian at the Pacific Boulevard/46th Street crossing in 1989, prior to implementation of PTC technology. There have been no other rail accidents at the four at-grade crossings (FRA 2023).

Figure 3.14-2. Existing At-Grade Crossings Along 49th Street and 46th Street

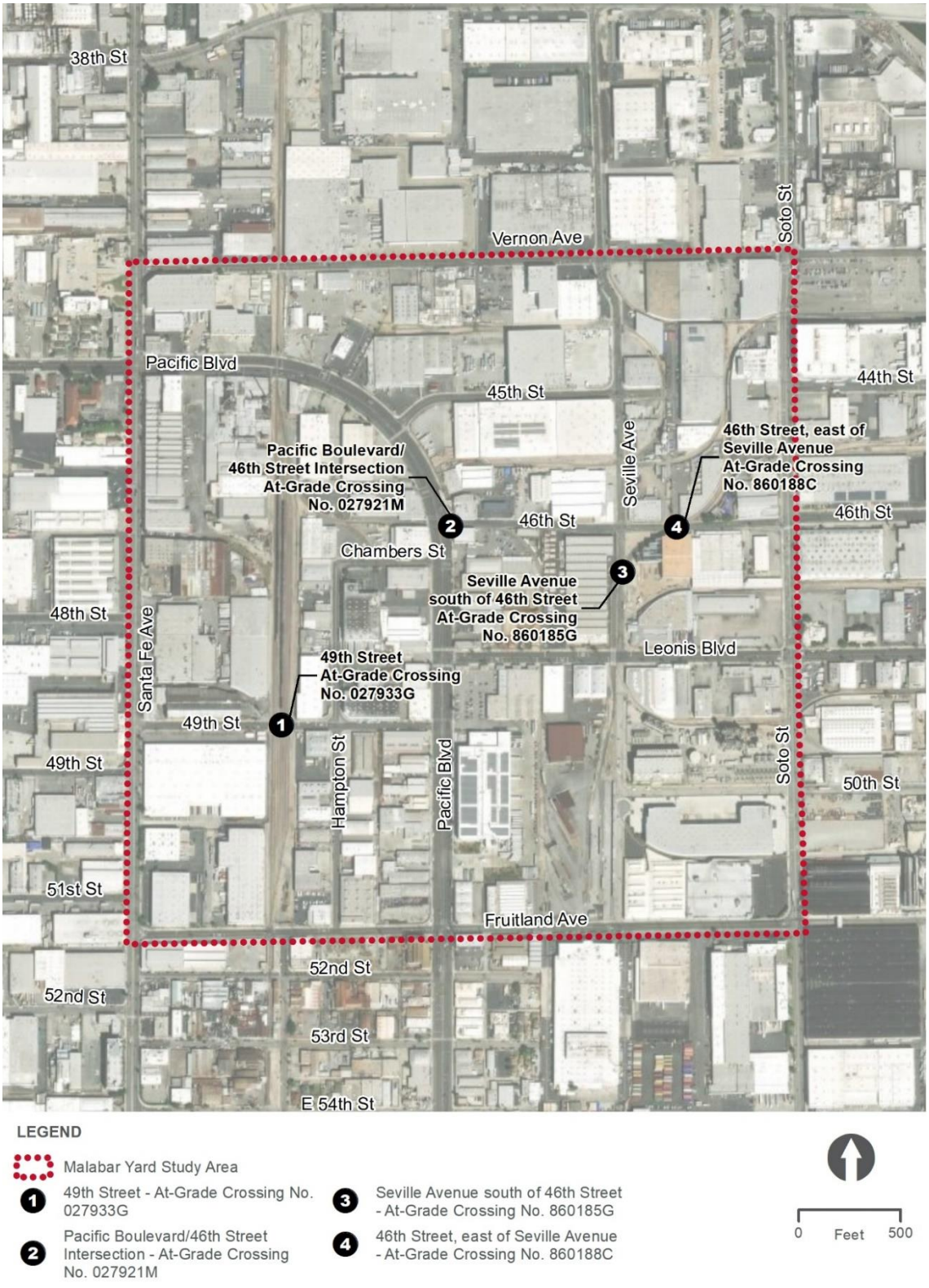

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Table 3.14-2. Existing At-Grade Crossing Characteristics and Safety Features

At-Grade Crossing	Crossing Surface	Existing Signs or Signals	Existing Advance Warning Signs	Pavement Markings	Gate Arms	Crossing Illumination
49th Street – Crossing No. 027933G	Asphalt	Yes	Yes	Yes	No	Yes, streetlights within approximately 50 feet
46th Street/ Pacific Boulevard, Crossing No. 027921M	Asphalt	Yes	Yes	No	No	No
46th Street east of Seville Avenue, Crossing No. 860188C	Asphalt	Yes	Yes	Yes	No	Yes, streetlights within approximately 50 feet
Seville Avenue South of 46th Street, Crossing No. 860185G	Asphalt	Yes	Yes	Yes	No	Yes, streetlights within approximately 50 feet

Pedestrian and Bicyclist Safety

There are existing sidewalks on both sides of 49th Street and 46th Street where the Malabar Yard railroad improvements would occur. The 46th Street crossing east of Seville Street lacks sidewalks on the south side of the street and the Seville Street crossing south of 46th Street lacks a sidewalk on the west side of the street. No pedestrians or bicyclists were observed during 2020 traffic counts.

Based on field observations and meetings with nearby property owners and business stakeholders, biking is not a heavily used mode of travel within the Malabar Yard study area due to the heavy truck traffic and narrow configuration of many streets, which would pose dangers to bicyclists. No bicycle facilities were identified within the study area.

The California Office of Traffic Safety provides annual data on vehicle, pedestrian, and bicycle collisions within cities and counties throughout California. The most recent data available when this evaluation began was provided by the California Office of Traffic Safety for 2020 Collision Rankings. Table 3.14-3 displays the number of pedestrians and bicyclists killed and injured in accidents with vehicles in Los Angeles County and the City of Vernon. Data is unavailable for

collisions that occurred for sub-areas of the city and specifically within the Malabar Yard study area.

Table 3.14-3. Pedestrian and Bicyclist Victims Killed or Injured (2020)

Jurisdiction	Pedestrians	Bicyclists
Los Angeles County	4,661	2,601
City of Vernon	3	12

Source: California Office of Traffic Safety 2020

Security Conditions

Existing security conditions regarding crime and terrorism within the Malabar Yard study area are described below.

Crime

Table 3.14-4 lists violent crimes reported by the City of Vernon Police Department to the FBI from 2011-2020 (FBI 2023). Violent crime is composed of four types of offenses: homicide, rape, robbery, and aggravated assault. Table 3.14-5 lists property crimes reported by the City of Vernon Police Department to the FBI from 2011-2020 (FBI 2023), setting the background of property crime in the vicinity of the Malabar Yard study area. Property crime is composed of four types of offenses: arson, burglary (breaking and entering), larceny (unlawful take of property), and motor vehicle theft.

The City of Vernon has a significantly higher crime index compared to surrounding areas. However, this index is skewed higher because indices are based on residential population. The City of Vernon is primarily an industrial area with a residential population of 302 people. Property crimes, robbery, and aggravated assault are high relative to population.

Table 3.14-4. Violent Crimes Reported by the City of Vernon Police Department (2011-2020)

Year	Type of Violent Crime			
	Homicide	Rape	Robbery	Aggravated Assault
2011	0	1	19	13
2012	1	1	16	9
2013	0	0	13	9
2014	0	1	10	14

Table 3.14-4. Violent Crimes Reported by the City of Vernon Police Department (2011-2020)

Year	Type of Violent Crime			
	Homicide	Rape	Robbery	Aggravated Assault
2015	1	1	12	14
2016	1	1	18	8
2017	0	0	20	15
2018	1	1	13	12
2019	0	1	12	14
2020	0	3	28	17

Source: Federal Bureau of Investigation 2023

Table 3.14-5. Property Crimes Reported by the City of Vernon Police Department (2011-2020)

Year	Type of Property Crime			
	Arson	Burglary	Larceny	Motor Vehicle Theft
2011	1	30	183	95
2012	0	26	199	86
2013	0	28	187	106
2014	1	36	192	84
2015	0	30	171	89
2016	4	44	207	125
2017	5	60	229	135
2018	2	82	195	106
2019	5	133	272	80
2020	5	186	466	208

Source: Federal Bureau of Investigation 2023

Terrorism

With regard to terrorism concerns, possible targets in the City of Vernon include major rail yards, power generation facilities, and any business with significant volumes of hazardous materials, all of which are present in the Malabar Yard study area and 0.5-mile buffer.

The Department of Homeland Security and the Department of Transportation are responsible for safe-guarding transportation facilities and other potential terrorism targets, and the city cooperates with these agencies in these efforts (City of Vernon 2015). The City of Vernon Police Department and BNSF Railroad Police conduct routine patrol activities and are provided with the appropriate training to minimize threats.

3.14.4 Environmental Consequences

No Action Evaluation

The following topics were evaluated to determine effects if the Malabar Yard railroad improvements in the City of Vernon were not implemented in conjunction with the Build Alternative.

Community Safety Services

If the Malabar Yard railroad improvements were not implemented, near-term improvements that are funded and identified in applicable planning documents would still be implemented that may cause an increase in demand for community safety services. Operation of the Malabar Yard would continue in business-as-usual conditions. No direct or indirect adverse effect would occur.

Safety Conditions

If the Malabar Yard railroad improvements were not implemented, the existing at-grade crossings would not be enhanced with new safety features and would pose a potential safety risk at the existing at-grade crossings. An adverse effect may occur. No mitigation is applicable with the exception of implementation of the Malabar Yard railroad improvements.

Security Conditions

If the Malabar Yard railroad improvements were not implemented, existing safety and security plans would continue to guide safety and security management at Malabar Yard. Operation of Malabar Yard would continue in business-as-usual conditions and no direct or indirect adverse effect would occur.

TOPIC 3.14-A	Community safety services

Direct Effects – Construction

Construction staging areas would be located within the boundary of the Project footprint for the design options considered and coordinated through the property acquisition process. To minimize the potential need for police protection services, standard specifications would be followed

requiring staging areas to be fenced to control access to construction activities, materials, and equipment. The construction contractor would be responsible for providing fencing, no trespassing signage, security lighting, and on-site security during and after construction hours, pursuant to BNSF's standard specifications. CCR Title 8, overseen by Cal/OSHA, regulates workplace and construction work-site safety throughout California. Title 8 requires compliance with standard procedures to prevent construction work-site accidents and requires a written workplace Injury and Illness Prevention Program to be in place (CCR Title 8, Section 1502 et seq.; Pocket Guide for the Construction Industry [Cal/OSHA 2019]). Standard implementation of a construction safety and health plan during construction, in compliance with legal requirements mentioned above, would reduce risk to human health during construction by establishing protocols for safe construction, including daily safety awareness meetings and training to establish a safety culture among the workforces.

As discussed in Section 3.3, temporary roadway closures and detours could cause potential delays in response times for emergency vehicles. Implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #5: Vernon Avenue/Santa Fe Avenue and Intersection #6: Santa Fe Avenue/Pacific Boulevard), which may also affect response times or performance objectives of emergency responders during construction. This is considered an adverse effect. Implementation of Malabar Yard Mitigation Measure TR-1 (as described in Section 3.3, Transportation) requires a TMP to be prepared, clearly marked detours to be implemented, and advanced notice be provided to nearby residences, emergency service providers, public transit and bus operators, the bicycle community, businesses, and organizers of special events. The TMP requires traffic flow to be maintained to the safest degree feasible and the City of Vernon to be notified in advance of street closures, detours, or temporary lane reductions. Malabar Yard Mitigation Measures TR-2 and TR-3 require restriping at the Vernon Avenue/Santa Fe Avenue intersection and Santa Fe Avenue/Pacific Boulevard intersection, respectively. Implementation of Malabar Yard Mitigation Measures TR-1 through TR-3 would minimize construction-related effects on community safety services during construction. Upon implementation of Malabar Yard Mitigation Measures TR-1 through TR-3, no direct adverse effect would occur.

Direct Effects – Operations

With the closure of the 49th Street at-grade crossing, alternate east/west access for emergency service responders would continue to be available on Pacific Boulevard and on Fruitland Avenue, 1,000 feet to the south of 49th Street. This would not substantially affect emergency response times due to the configuration of adjacent roadways.

As discussed in Section 3.3, implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard), which may also affect response times, or performance objectives of emergency responders during operations. In addition, a potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may also affect response times. This is

considered an adverse effect. Malabar Yard Mitigation Measures TR-3 and TR-4 (described in Section 3.14.5) are proposed to improve the V/C ratio at Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue, respectively. Implementation of Malabar Yard Mitigation Measure TR-5 (described in Section 3.14.5) is proposed to maintain the LOS along Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard. Malabar Yard Mitigation Measure TR-6 minimizes the potential roadway hazard; however, to establish the level of effectiveness, further coordination with CPUC and the City of Vernon is required.

Indirect Effects – Construction and Operations

Operation of the Malabar Yard railroad improvements would not indirectly generate substantial population or employment growth that would result in the need for new or expanded public services (police protection, fire protection, or emergency medical services). No indirect adverse effect would occur.

TOPIC 3.14-B	Safety conditions

Direct Effects – Construction

Construction activities associated with Malabar Yard railroad improvements may result in potential safety hazard risks that could include, but would not be limited to, falling objects, slips and falls, and personnel being hit by construction devices or vehicles, for the general public and construction workers. However, this exposure to worksite hazards would be a temporary condition. All applicable codes and regulations for construction safety would be followed by the contractor in accordance with BNSF's standard specifications, including but not limited to: CCR Title 8, Construction Safety Orders; FRA regulations (49 CFR 214, 49 CFR 219, 49 CFR 225, 49 CFR 228, and 29 CFR 236) related to railroad construction worker safety; CPUC General Orders; and OSHA regulations. Measures would also be implemented when construction activities expose underground utilities and/or when excavated trenches have been created and left in an open state during construction hours and nighttime hours to further minimize potential safety hazards.

Construction of the Malabar Yard railroad improvements would also involve the use of heavy equipment in close proximity to active businesses present in the Malabar Yard study area. During the traffic counts conducted in 2020, no pedestrians or bicyclists were observed on the roadway segments and/or intersections evaluated. However, there is still potential for safety risks to pedestrians and bicyclists due to the temporary detours and lane blockages that would affect local streets. Roadway modifications could affect accessibility to private driveways, parking areas, loading docks, sidewalks, and bike lanes during construction. This is considered an adverse effect. As part of the TMP required by Malabar Yard Mitigation Measure TR-1 (as described in Section 3.3, Transportation), specific measures would be required to be in place to maintain safety for pedestrians, bicyclists, emergency responders, motorists, and construction workers throughout construction. As part of the TMP, proposed closure schedules and detour routes, as well as construction traffic routes, including haul truck routes, and preferred delivery/haul-out locations and hours would be identified. Pedestrian and bicycle detours would be provided as

needed, to provide a physical separation from construction activities with adequate signage to maintain safety on affected roadways. When a crosswalk is closed due to construction activities, pedestrians would be directed to nearby alternate crosswalks. Depending on the construction activity and the construction sequencing, temporary barricades and fencing may be provided to prevent pedestrian, bicycle, and vehicle circulation hazards. Implementation of Malabar Yard Mitigation Measure TR-1 would be required to maintain safety for pedestrians, bicyclists, and construction workers throughout construction. Upon implementation of Malabar Yard Mitigation Measure TR-1, no direct adverse effect would occur.

Direct Effects – Operations

46th Street Connector Design Option 1

The new track alignment under Design Option 1 would be placed along the south side of 46th Street, on a portion of new railroad ROW that would require acquisition of private properties (4600 Pacific Boulevard, 4618 Pacific Boulevard, 2665 Leonis Boulevard, and a vacant lot [APN 6308-002-017]) where there are existing driveways in use for business employee and truck access. Design Option 1 would result in the potential closure and modifications to existing driveways to maintain safe egress in and around the surrounding area (impacts on driveways are discussed in detail in Sections 3.2, Land Use and Planning and Section 3.3, Transportation). Although the new track alignment under Design Option 1 would modify the pedestrian and bicycle access that currently exists along the south side of 46th Street, sidewalk/ramp improvements would be constructed along the south side of the reconstructed portion of 46th Street and at the southeast/southwest corners of the Seville Avenue and 46th Street intersection. New sidewalks are beneficial as they would enhance safety conditions for pedestrians and bicyclists. Furthermore, all Malabar Yard railroad improvements would be designed and constructed to comply with FRA and CPUC standards and specifications to maximize safety for both motorized and non-motorized forms of transportation, such as FRA regulations and the Rail Safety Improvement Act.

The 46th Street Connector would not increase potential for derailment due to the improvements being constructed per applicable code requirements and the grade and extent of proposed improvements. As discussed in Section 3.3, a potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may expose pedestrians, bicyclists, or vehicles to accidents/incidents. This is considered an adverse effect. Malabar Yard Mitigation Measure TR-6 minimizes the potential roadway hazard; however, to establish the level of effectiveness, further coordination with CPUC and the City of Vernon is required.

46th Street Connector Design Option 2

Similar to Design Option 1, operation of the new 1,000-foot track segment and the new at-grade crossing at the intersection of 46th Street and Seville Avenue would pose a new safety hazard for auto, truck, bicycle, and pedestrian traffic adjacent to existing businesses. The track alignment for Design Option 2 would be constructed within existing roadway limits slightly north of the alignment considered for Design Option 1. Similar to Design Option 1, the 46th Street Connector

would not increase potential for derailment due to the improvements being constructed per applicable code requirements and the grade and extent of proposed improvements. Although less ROW acquisition would be required and fewer private driveways would be affected with Design Option 2 (as depicted in Figure 2-4 of this document), the three existing driveways that would remain open would not include new safety enhancements due to the configuration of the new railroad alignment within the roadway. As discussed in Section 3.3, a potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may expose pedestrians, bicyclists, or vehicles to accidents/incidents. This is considered an adverse effect. Malabar Yard Mitigation Measure TR-6 minimizes the potential roadway hazard; however, to establish the level of effectiveness, further coordination with CPUC and the City of Vernon is required.

49th Street Closure Design Options 1 and 2

The closure of the existing at-grade railroad crossing at 49th Street includes the following safety and civil improvements to maximize safety for both motorized and non-motorized forms of transportation:

- New roadway signage at the east side of the Santa Fe Avenue and 49th Street intersection
- Replacement of existing sidewalk and asphalt as part of cul-de-sac improvements along 49th Street
- Restriping of 49th Street
- Installation of new removable bollards at the Hampton Street and 49th Street intersection
- Installation of new roadway signage at the west side of the Hampton Street and 49th Street intersection
- Installation and restoration of property fence lines where applicable

ROW acquisition of private property would be required for either cul-de-sac design option and two driveways would be modified. Fencing would be installed along the western property line of Malabar Yard at 49th Street, consistent with property fencing that exists today. The fencing would prohibit pedestrian and bicycle access to Malabar Yard and reduce the risk of accidents. Closure of the 49th Street at-grade crossing would be subject to review and approval by CPUC. Application for review would be submitted concurrent with the NEPA process and would be available for public review. All Malabar Yard railroad improvements would be designed and constructed to comply with CPUC and FRA standards and specifications to maximize safety for both motorized and non-motorized forms of transportation. No direct adverse effect would occur.

Indirect Effects – Construction and Operations

No indirect effects resulting from construction activities would occur. Operation of the Malabar Yard railroad improvements would result in safety enhancements at 46th Street (arms, flashers, raised medians, and driveway gates) and at 49th Street (at-grade crossing closure with fencing to prohibit unauthorized access). No indirect adverse effect would occur.

TOPIC 3.14-C	Security conditions

Direct Effects – Construction

Construction of the Malabar Yard railroad improvements is not expected to result in increased crime in the Malabar Yard study area. Criminal activity within the Malabar Yard study area would be typical of crimes that occur at similar construction sites, such as theft of equipment and materials or vandalism after work hours. After work hours, when construction equipment is idle and no personnel are on site, there is potential for trespassing and vandalism in the construction area, especially in staging areas. However, the construction contractor would be responsible for providing fencing, no trespassing signage, security lighting, and on-site security during and after construction hours, pursuant to BNSF's standard specifications. With implementation of common construction security measures and compliance with standard specifications for Worksite Security Requirements, potential security hazards would be reduced. No direct adverse effect would occur.

Direct Effects – Operations

New fencing would be installed at the 49th Street crossing to avoid trespassing into railroad property. The 46th Street Connector would be configured in a manner similar to many other active rail lines in the City of Vernon. Security of the Malabar Yard railroad improvements during operations would be maintained by City of Vernon Police Department in conjunction with BNSF railroad police officers commissioned under the provisions of 49 CFR 207. Railroad police officers may enforce relevant laws for the protection of the railroad's employees, the railroad's property, property entrusted to the railroad for transportation purposes, and the movement of cargo in the railroad's possession or while on the railroad's property. No direct adverse effect would occur.

Indirect Effects

The Malabar Yard railroad improvements would be constructed in accordance with all applicable code requirements and the design of proposed railroad improvements may lead to a more secure facility for all users. Furthermore, as previously described above, security of the Malabar Yard railroad improvements would be maintained by City of Vernon Police Department in conjunction with BNSF railroad police officers. Implementation of the Malabar Yard railroad improvements is not expected to induce crime in the Malabar Yard study area nor is it expected to require the provision of new or expanded public services for security. Existing security measures are already in place by BNSF at the Malabar Yard and these measures would be maintained. No indirect adverse effect would occur.

3.14.5 Mitigation Measures

Implementation of the following mitigation measure would avoid or minimize potential adverse effects related to safety and security in the Malabar Yard study area. Mitigation measures for the Malabar Yard railroad improvements include "MY" in the nomenclature, as shown below.

MY TR-1 **Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements.** See Section 3.3, Transportation for details.

MY TR-2 **Temporary Restriping and Adding a Right-turn Overlap Phase in Westbound Direction of the Vernon Avenue/Santa Fe Avenue Intersection**. See Section 3.3, Transportation for details.

MY TR-3 **Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection**. See Section 3.3, Transportation for details.

MY TR-4 **Restriping of the Pacific Boulevard/Fruitland Avenue Intersection (Future Horizon Year 2040)**. See Section 3.3, Transportation for details.

MY TR-5 **Add a New Vehicular Lane on the Fruitland Avenue Roadway Segment between Santa Fe Avenue and Pacific Boulevard (Future Horizon Year 2040)**. See Section 3.3, Transportation for details.

MY TR-6 **Obtain Required Approvals for At-Grade Railroad Crossings.** See Section 3.3, Transportation for details.

3.15 Socioeconomics and Communities Affected

This section provides an evaluation of potential effects related to existing socioeconomic conditions and established communities that may result upon implementation of the Malabar Yard railroad improvements.

Other land use, planning, community, and economic issues are described and analyzed in other Malabar Yard railroad improvement sections, as follows:

- Section 3.2, Land Use and Planning, addresses effects relative to established communities, land use compatibility, and consistency with applicable planning documents;
- Section 3.3, Transportation, addresses potential effects on connectivity and vehicular traffic;
- Section 3.13, Economic and Fiscal Impacts, addresses potential effects relative to employment, income, and tax revenue; and
- Section 3.16, Environmental Justice, addresses potential effects relative to minority populations and low-income populations.

3.15.1 Regulatory Framework

Table 3.15-1 identifies and summarizes applicable laws, regulations, and plans relative to socioeconomics and community issues.

Table 3.15-1. Applicable Laws, Regulations, and Plans for Socioeconomics and Community Issues

Law, Regulation, or Plan	Description
Federal	
Federal Railroad Administration, *Procedures for Considering Environmental Impacts Sec. 14(n)(16)*, 64 *Federal Register* 28545-28556 (May 26, 1999)[1]	The FRA's Environmental Procedures require the draft and final EIS to assess the number and kinds of available jobs, the potential for community disruption, the possibility of demographic shifts, the need for and availability of relocation housing, effects on commerce, including effects on existing businesses, metropolitan areas, and effects on local government services and revenues.
Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970	The Uniform Act provides uniform and equitable treatment of persons displaced from their homes, businesses, non-profit associations, or farms by federal and federally assisted

[1] While this environmental document was being prepared, FRA adopted new NEPA compliance regulations (23 CFR 771). Those regulations only apply to actions initiated after November 28, 2018. See 23 CFR 771.109(a)(4). Because this environmental document was initiated prior to that date, it remains subject to FRA's Environmental Procedures rather than the Part 771 regulations.

Table 3.15-1. Applicable Laws, Regulations, and Plans for Socioeconomics and Community Issues

Law, Regulation, or Plan	Description
(Uniform Act) (42 United States Code 4601 et seq.)	programs, and establishes uniform and equitable land acquisition policies. The Uniform Act requires the owning agency to notify affected owners of the agency's intent to acquire an interest in their property, including a written offer letter of just compensation that specifically describes those property interests and assigns a ROW specialist to each property owner to assist them with this process. The Uniform Act also provides financial and advisory benefits to displaced individuals to help them relocate their residence or business. Benefits are available to owners and tenants of residential and business properties. In compliance with the Uniform Act, property owners and tenants would receive relocation assistance and would be compensated. If required, housing of last resort would be used, which may involve payments for replacement housing costs that exceed the maximum amounts allowed under the Uniform Act or other methods of providing comparable decent, safe, and sanitary housing within the financial means of the displaced persons.
Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks (1997)	A growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because: children's neurological, immunological, digestive, and other bodily systems are still developing; children eat more food, drink more fluids, and breathe more air in proportion to their body weight than adults; children's size and weight may diminish their protection from standard safety features; and children's behavior patterns may make them more susceptible to accidents because they are less able to protect themselves. Therefore, to the extent permitted by law and appropriate, and consistent with the agency's mission, each Federal agency: (a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.
Executive Order 13166: Improving Access to Services for Persons with Limited English Proficiency (August 11, 2000)	The EO requires Federal agencies to examine the services they provide, identify any need for services to those with LEP, and develop and implement a system to provide those services so LEP persons can have meaningful access to them. It is expected that agency plans will provide for such meaningful access consistent with, and without unduly burdening, the fundamental mission of the agency. The EO also requires that the Federal agencies work to ensure that recipients of Federal financial assistance provide meaningful access to their LEP applicants and beneficiaries. To assist Federal agencies in carrying out these responsibilities, the U.S. Department of Justice has issued a Policy Guidance Document, "Enforcement of Title VI of the Civil Rights Act of 1964 - National Origin Discrimination Against

Table 3.15-1. Applicable Laws, Regulations, and Plans for Socioeconomics and Community Issues	
Law, Regulation, or Plan	**Description**
	Persons With Limited English Proficiency" (LEP Guidance). This LEP Guidance sets forth the compliance standards that recipients of Federal financial assistance must follow to ensure that their programs and activities normally provided in English are accessible to LEP persons and thus do not discriminate on the basis of national origin in violation of Title VI's prohibition against national origin discrimination.
Title VI of the Civil Rights Act of 1964 (42 USC 2000d et seq.)	All relocation services and benefits would be administered without regard to race, color, national origin, or sex in compliance with Title VI of the Civil Rights Act (Title 42 USC Section 2000d, et seq.). Benefits for eligible owners and tenants are determined on an individual basis and explained in detail by an assigned ROW specialist.
Americans with Disabilities Act of 1990 (42 USC § 12101)	This Act prohibits discrimination based on disability.
State	
California Department of Transportation Standard Environmental Reference, Environmental Handbook Volume 4: Community Impact Assessment (2011)	The Caltrans SER Environmental Handbook provides guidance for design of transportation projects to consider impacts on communities and neighborhoods.
California Relocation Assistance Act (January 1, 1998)	The California Relocation Assistance Act includes requirements for just compensation for real property. Owners of private property have federal and state constitutional guarantees that their property will not be taken for public use or damaged unless they first receive just compensation. Just compensation is measured by the fair market value of the acquired property. According to the Code of Civil Procedure Section 1263.320a, “fair market value is considered to be the highest price on the date of valuation that would be agreed to by a seller, being willing to sell, but under no particular or urgent necessity for so doing, nor obliged to sell; and a buyer, being ready, willing and able to buy but under no particular necessity for so doing, each dealing with the other with the full knowledge of all the uses and purposes for which the property is reasonably adaptable and available.”
Sustainable Communities and Climate Protection Act, Senate Bill 375 (2008)	SB 375 of 2008 provides for greater coordination of state housing and environmental and transportation laws and requires regional MPOs to develop an SCS as part of the RTP. SCAG is the MPO for the City of Vernon.

Table 3.15-1. Applicable Laws, Regulations, and Plans for Socioeconomics and Community Issues	
Law, Regulation, or Plan	**Description**
Local	
Southern California Association of Governments 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy	The SCAG 2016-2040 RTP/SCS identifies and analyzes transportation needs for the region and creates a framework for project priorities.

Notes:
Caltrans=California Department of Transportation; EIS=Environmental Impact Statement; FRA=Federal Railroad Administration; LEP=Limited English Proficiency; MPO=metropolitan planning organizations; RTP=regional transportation plan; SCAG=Southern California Association of Governments; SB=Senate Bill; SCS=Sustainable Communities Strategy; SER=Standard Environmental Reference; USC=United States Code

3.15.2 Methods for Evaluating Environmental Effects

Topics Considered

An evaluation was performed to determine if the Malabar Yard railroad improvements would affect:

- Community facilities;
- Government Services;
- Population growth;
- Business displacements and the economy; or
- Community character and cohesion.

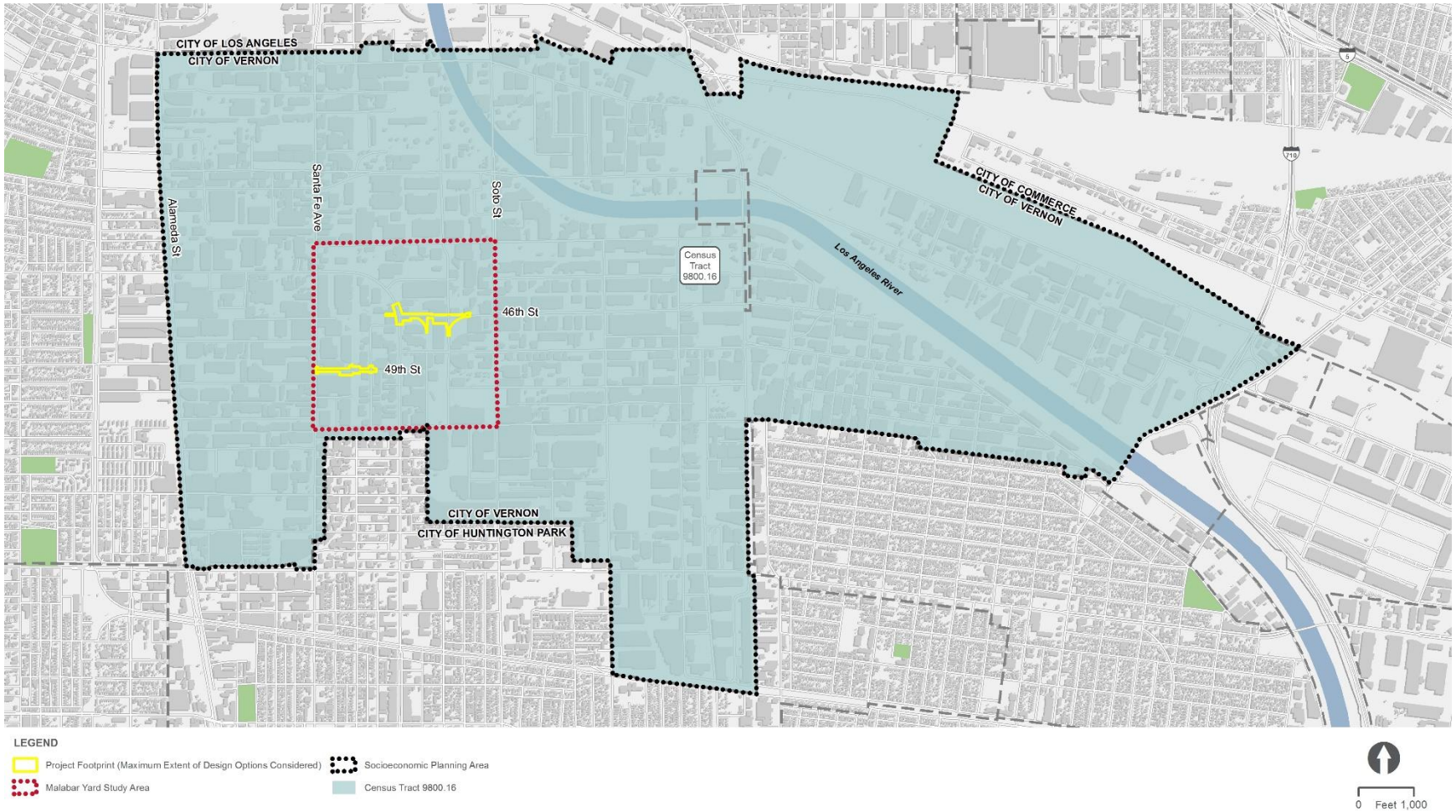
Effects are described in Section 3.15.3 based on the type, duration, context, and intensity. The methodology used to determine effects is described below for every topic considered in the evaluation.

Geographic Area for Analysis

While the Malabar Yard study area is used as a general point of geographic reference, the socioeconomic planning area comprised of the outer limit of Census Tract 9800.16, is used to characterize the affected environment and to identify regional and local demographic characteristics. The Project footprint for the design options considered is the geographic area considered to determine where potential socioeconomic and community impacts would occur.

The three geographic boundaries depicted on Figure 3.15-1 include the Malabar Yard Project footprint (maximum extent of design options considered), the Malabar Yard study area, and the socioeconomic planning area.

Figure 3.15-1 Malabar Yard Footprint, Study Area, and Socioeconomic Planning Area



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Methodology

Terminology

The following terms are used in this section:

Minority persons: Minority persons are defined as all individuals who identify as Black or African American; Hispanic or Latino, regardless of race; Asian; American Indian and Alaska Native; or Native Hawaiian and Other Pacific Islander; some other race alone, or two or more races (U.S. Census Bureau 2021e).

Low-income household: Households with income below 150% of the U.S. Census poverty threshold, in accordance with FTA Circular 4703.1 (August 15, 2012).

Community cohesion: Community cohesion is the degree to which residents each have a sense of belonging to their neighborhood; a high level of commitment to the community; or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time (Caltrans 2011).

Economic effects: The analysis of economic effects includes an evaluation of potential relocations and displacements, estimated job loss/employment opportunities, and property/sales tax implications. As discussed in Section 3.13, economic effects were estimated using the IMPLAN® input-output model, which estimates three types of effects that differ from other community effects:

- **Direct economic effect –** This refers to the economic activity occurring as a result of direct spending by businesses or agencies (e.g., direct spending on construction and professional services).
- **Indirect economic effect –** This refers to the economic activity resulting from purchases by local firms who are the suppliers to the directly affected businesses or agencies (e.g., spending by suppliers of the contractor responsible for individual components).
- **Induced economic effect –** This represents the increase in economic activity, over and above the direct and indirect effects, associated with the increased labor income that accrues to workers (of the contractor and all suppliers) and is spent on household goods and services purchased from businesses.

Acquisitions: A full acquisition of a property is defined as an area in which occupants of residential and nonresidential units would be displaced and expected to permanently relocate. A partial acquisition is when a small area of property is acquired, but full use of the property and dwelling structures, including multifamily units, would remain. Generally, partial acquisitions consist of portions of a back, side, or front yard; landscaping; or parking.

Growth-related effects: The analysis of growth-related, indirect effects was prepared based on the *Guidance for Preparers of Growth-Related, Indirect Impact Analyses* (Caltrans 2006), developed with representatives from Caltrans, FHWA, and U.S. EPA. The analysis of

growth-related effects draws extensively from the General Plan and specific plans of the City of Los Angeles.

Data Sources

Various data sources were used to identify existing conditions, including:

- Census data;
- Aerial maps and road maps;
- GIS (Geographic Information System) data;
- Windshield surveys; and,
- Agency documentation.

Community Facilities

Key community facilities and public services such as parks and recreational centers, public or publicly funded schools, childcare centers, health care facilities, libraries, and places of worship were identified using publicly available data.

Project-related effects would be considered adverse if the Malabar Yard railroad improvements temporarily or permanently impedes access or use of community facilities; restrict access to the facilities; introduces noise or glare that reduces the public's ability to use the public facility; or results in traffic or circulation restrictions that degrades emergency response times on a temporary or permanent basis.

Government Services

Government services typically consist of police protection, fire protection, and emergency service providers. The City of Vernon Police Department website, Los Angeles County Fire Department website, and the City of Vernon General Plan were reviewed to determine the location and service areas of fire stations, police stations, and other emergency providers that serve the Malabar Yard study area.

Project-related effects would be considered adverse if the Malabar Yard railroad improvements would result in the need for additional staffing or expansion of existing government service facilities resulting in physical impacts associated with the provision of new or physically altered government service facilities.

Population Growth

The analysis of growth-related, indirect impacts on population was prepared following the first-cut screening guidelines provided in the *Guidance for Preparers of Growth-Related, Indirect Impact Analyses* (Caltrans 2006) and in accordance with CEQ regulations (40 CFR 1508.8).

The analysis of growth-related impacts was developed by applying the following steps from the guidance document:

- Identifying the potential for growth resulting from the railroad improvements to determine if the railroad improvements will change the location, rate, type, or amount of growth.
- Assessing the growth-related effects of the railroad improvements to resources of concern to determine if these resources would be affected.
- Considering additional opportunities to avoid and minimize growth-related impacts.
- Comparing the results of the analysis with and without the Malabar Yard railroad improvements.
- Documenting the process and findings of the analysis.

Business Displacements and the Economy

As discussed in Section 3.13, Economic and Fiscal Impacts, the analysis of economic effects includes an evaluation of potential relocations and displacements, estimated job loss/employment opportunities, and property/sales tax implications. Economic effects can either be beneficial or adverse. Economic effects may be beneficial due to an increase in economic activity from direct spending on construction, addition of jobs, and generation of federal, state, and local tax revenues. Adverse economic effects would only occur if businesses on acquired parcels are not able to be relocated resulting in loss of property tax revenues and employment.

Community Character and Cohesion

Evaluation of cohesion in communities and neighborhoods includes an examination of potential disruption of existing communities and the creation of physical, social, or perceived barriers within an established community or neighborhood.

A two-step process was used to determine if community character or cohesion would be affected. The first step was to determine the level of existing community cohesion within the Malabar Yard study area. This was accomplished by reviewing census data for the various factors above, where such information was available.

Once the level of community cohesion was identified from these data points, the analysis identified if the infrastructure would result in changes to the existing community cohesion level. Adverse effects on community cohesion are determined if a project is likely to.

- Creates a barrier or physically divide a community in a way that would limit circulation, social interaction, and access to businesses and community facilities;
- Causes a change in population that affects the social or cultural character of the community; or
- Affects quality of life through increased traffic, noise and vibration, or induced population growth affecting public services to the extent that it would change community character.

3.15.3 Affected Environment

This section describes existing conditions with regard to community characteristics, economic and employment characteristics, and land uses where property acquisitions may occur. The affected environment also describes population characteristics, including population demographics, age, income, household characteristics, linguistic isolation, and disabilities; housing; environmental justice (EJ) populations; local economy; community facilities and public services; and non-motorized circulation.

Land Use

Malabar Yard is located approximately 3 miles south of LAUS in the City of Vernon, California. The existing land uses within the Malabar Yard study area consist of industrial and mixed commercial uses, transportation-railroad uses, and communications, utilities-related uses. Existing businesses in the area include warehouses, wholesale and distribution services, and other commercial enterprises. Roadways in the vicinity of the Malabar Yard railroad improvements include Pacific Boulevard, Seville Avenue, 46th Street, and 49th Street. There are no residential uses in the Malabar Yard study area and in general, the City of Vernon has a low housing count (78 housing units). The nearest residences are located outside of the Malabar Yard study area, on Furlong Place, approximately 1,650 feet (0.31 miles northwest from the Malabar Yard railroad improvements).

Community Facilities

Community facilities are an important aspect of neighborhood identity. Schools, hospitals, and other community facilities can be critical resources for the community. Transportation projects can result in adverse and beneficial effects on community services, thus impacting the character and cohesion of a community, either temporarily or permanently. Community facilities typically include parks and recreational centers, public or publicly funded schools, childcare centers, health care facilities, libraries, and places of worship.

As depicted on Figure 3.15-2, there are no parks or recreational centers, schools, libraries, or places of worship within the Malabar Yard study area. Immediately outside the Malabar Yard study area is Vernon City School (2360 East Vernon Avenue) and Holy Angels Church of the Deaf (4433 South Santa Fe Avenue).

There is one medical facility, Stacy Medical Center (4580 Pacific Boulevard), located within the Malabar Yard study area.

Government Services

Government services typically consist of police protection, fire protection, and emergency service providers.

Police Protection

Law enforcement services in the Malabar Yard study area are provided by the City of Vernon Police Department. As depicted on Figure 3.15-2, there is one police station located within 0.5 mile of the Malabar Yard study area. The average response time for Priority 1 calls was 3 minutes and 14 seconds in 2016 (City of Vernon 2016).

Fire Protection

Fire protection services in the Malabar Yard study area were previously provided by the City of Vernon Fire Department. As of October 21, 2020, the City of Vernon transitioned all fire protection, paramedic, and incidental services to the Consolidated Fire Protection District of Los Angeles County (Los Angeles County Fire Department). As depicted on Figure 3.15-2, there is one fire station, Fire Station 52 (previously Vernon Fire Station 77), located within 0.5 mile of the Malabar Yard study area.

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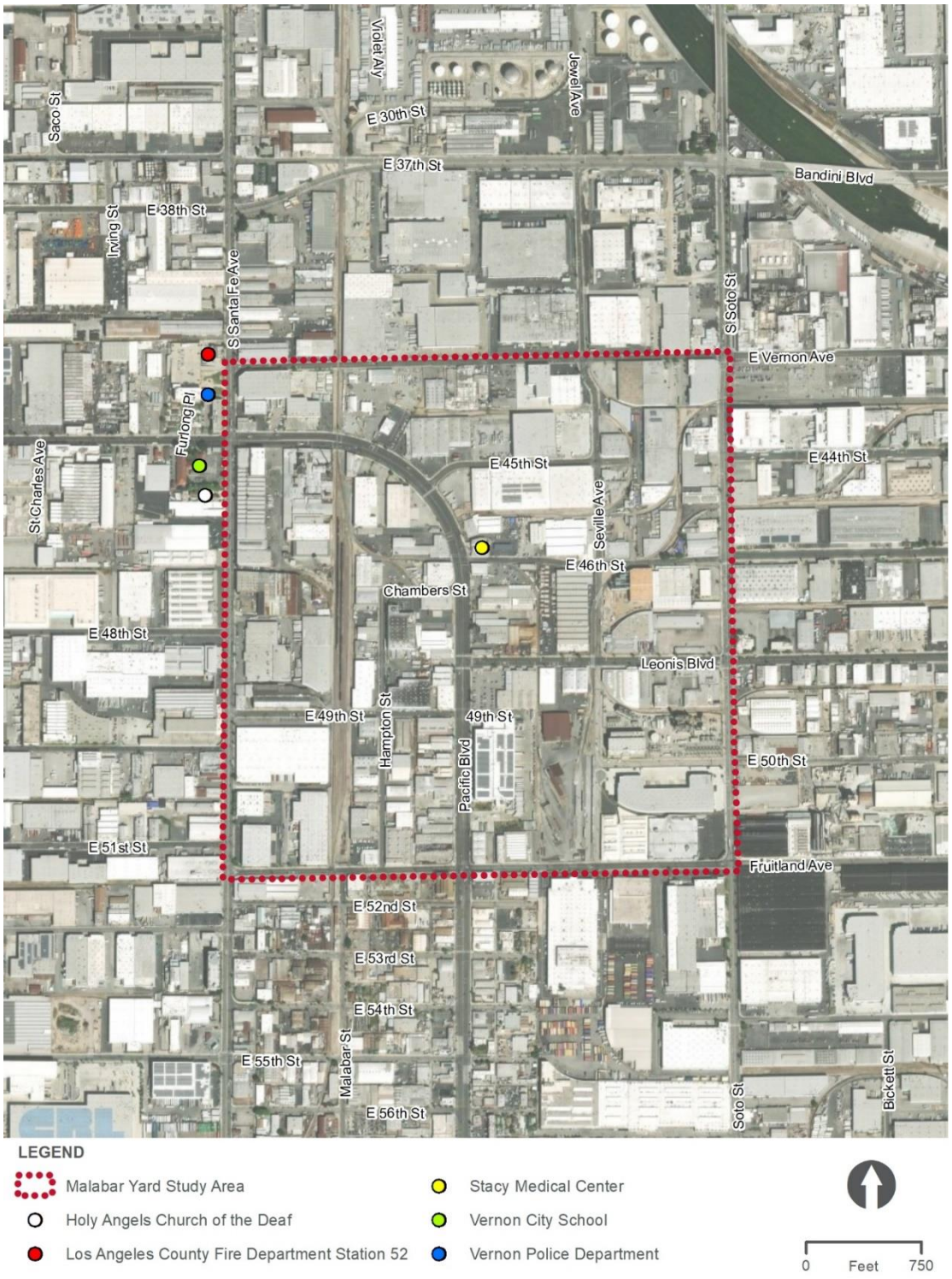
Figure 3.15-2 Community Facilities and Government Services Within and Near the Malabar Yard Study Area



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Population Characteristics

A community's characteristics can be described by demographic information, including population size, age composition, ethnicity, and household characteristics. This section describes the existing community characteristics, including population, demographic, and housing characteristics.

As the City of Vernon includes the entirety of Census Tract 9800.16, the data provided below is for the City of Vernon rather than the census tract or the Malabar Yard socioeconomic planning area. Additionally, due to the small population in the City of Vernon, the data provided below has a margin of error greater than 10 percent.

Population, Households and Employment

Regional and local population changes from 2010 to 2021 are summarized in Table 3.15-2.

Table 3.15-2 Existing Regional and Local Population Change

Geographic Area	2010	2021	Percent Change (2010 to 2021)
County of Los Angeles	9,818,605	10,019,635	+2.0%
City of Vernon	112	328	+192.8%

Source: California Department of Finance 2020; U.S. Census Bureau 2021a

As summarized in Table 3.15-2, the County of Los Angeles experienced population growth between 2010 and 2021. The net population change from 2010 to 2021 is 2 percent and 192.8 percent for the County of Los Angeles and the City of Vernon, respectively. Prior to 2013, the City of Vernon had policies to preclude development of new residential units due to potential conflicts with the almost exclusive industrial uses of the city (City of Vernon 2013). Southern California Association of Governments (SCAG) has historically assigned Vernon very low housing production goals due to the industrial nature of the city. In the city's 2014-2021 Housing Element, the city established a policy to increase the city's population through the construction of approximately 30 to 50 low- and very low-income units.

Race and Ethnicity

According to the 2021 American Community Survey 5-year Estimates, in 2021, the predominant racial/ethnic group in the City of Vernon is Hispanic of any race (90.2 percent), followed by White alone (5.8 percent), Black or African American (3.0 percent), and Asian (0.9 percent) (U.S. Census Bureau 2021a).

Income and Poverty

According to the 2021 American Community Survey 5-year Estimates, in 2021, the median household income in the City of Vernon in 2021 was $62,000 (U.S. Census Bureau 2021b). Zero percent of the population in the City of Vernon is considered below poverty level (U.S. Census Bureau 2021c).

Age Distribution

According to the 2021 American Community Survey 5-year Estimates, in 2021, the median age in the City of Vernon is 37.6 years (U.S. Census Bureau 2021c). Approximately 36.3 percent of the population is under 18 and 15.5 percent of the population is 65 and over (U.S. Census Bureau 2021c).

Special Populations

According to the 2021 American Community Survey 5-year Estimates, approximately 84.8 percent of the population over the age of 18 speaks a language other than English at home (U.S. Census Bureau 2021d).

Housing Characteristics

According to the 2020 decennial census, there was a total of 78 housing units in the City of Vernon. Of the 78 units, 72 units were occupied, and the remaining six units were vacant (U.S. Census Bureau 2021c).

Economic and Employment Characteristics

Regional and Local Economy

Based on the U.S. Census Bureau, in 2020, the primary jobs by industry sectors in the City of Vernon were manufacturing (42.0 percent), wholesale trade (31.8 percent), and transportation and warehousing (11.9 percent) (U.S. Census Bureau 2020). The primary jobs by industry sectors in Census Tract 9800.16 in 2020 were similar in makeup as the city with manufacturing comprising 41.9 percent of the total jobs, followed by wholesale trade at 31.8 percent, and transportation and warehousing at 12.0 percent (U.S. Census Bureau 2020).

Labor Force Characteristics

Based on the U.S. Census Bureau, in 2020, there were a total of 36,200 jobs in the City of Vernon (U.S. Census Bureau 2020).

According to the State of California Employment Development Department, the unemployment rate in the City of Vernon, as of October 2020 (not seasonally adjusted), was 6.4 percent (State of California Employment Development Department 2020). The State of California Employment Development Department does not have unemployment data at the census tract level, therefore the unemployment rate for Census Tract 9800.16 is not provided.

Community Cohesion Characteristics

The area surrounding the Malabar Yard railroad improvements is primarily industrial with active rail lines. There are no residential uses in the Malabar Yard study area and in general, the City of Vernon has a low housing count (78 housing units). The nearest residences are located outside of the Malabar Yard study area, on Furlong Place, approximately 1,650 feet (0.31 mile northwest from the Malabar Yard railroad improvements). As such, there are no cohesion characteristics present in the study area.

3.15.4 Environmental Consequences

No Action Evaluation

The following topics were evaluated to determine potential effects if the Malabar Yard railroad improvements in the City of Vernon were not implemented in conjunction with the Build Alternative.

Community Facilities

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects on community facilities would occur. As discussed above, there are no parks or recreational centers, schools, libraries, or places of worship within the Malabar Yard study area. The Vernon City School and Holy Angels Church of the Deaf would not be affected by the continuation of existing operations at Malabar Yard.

Government Services

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects on government services would occur. Police protection, fire protection, and emergency service providers would continue to serve the Malabar Yard study area on roadways in their existing configuration.

Business Displacements and the Economy

If the Malabar Yard railroad improvements were not implemented, no direct or indirect effects on businesses and the economy would occur because no property acquisitions or business displacements would result from ongoing operations at Malabar Yard.

Evaluation of Malabar Yard Railroad Improvements

TOPIC 3.15-A	Community facilities

Direct Effects – Construction

Construction activities associated with any combination of design options for the Malabar Yard railroad improvements would require TCEs, temporary closure of roadway travel lanes, construction adjacent to major roadways, and changes in traffic routes where closures would

occur. Within the Malabar Yard study area, there is only one community facility, Stacy Medical Center (4580 Pacific Boulevard). As discussed in Section 3.3, temporary roadway closures and detours could cause potential delays for emergency vehicles accessing this facility. In addition, implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #5: Vernon Avenue/Santa Fe Avenue and Intersection #6: Santa Fe Avenue/Pacific Boulevard); this may also affect access to Stacy Medical Facility during construction. This is considered an adverse effect. However, implementation of Malabar Yard Mitigation Measure TR-1 (see Section 3.3, Transportation for details) requires a TMP to be prepared, clearly marked detours to be implemented, and advanced notice be provided to nearby residences, emergency service providers, public transit and bus operators, the bicycle community, businesses, and organizers of special events. The TMP requires traffic flow to be maintained to the safest degree feasible and the City of Vernon to be notified in advance of street closures, detours, or temporary lane reductions. Malabar Yard Mitigation Measures TR-2 and TR-3 require restriping at the Vernon Avenue/Santa Fe Avenue intersection and Santa Fe Avenue/Pacific Boulevard intersection, respectively. Implementation of Malabar Yard Mitigation Measures TR-1 through TR-3 would minimize construction-related effects on community facilities during construction. Upon implementation of Malabar Yard Mitigation Measures TR-1 through TR-3, no direct adverse effect would occur.

Direct Effects – Operations

As discussed in Section 3.3, implementation of the Malabar Yard railroad improvements would exceed the applicable V/C ratio threshold at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard), which may also affect access to the Stacy Medical Facility during operations. In addition, a potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may also affect access to the Stacy Medical Center. This is considered an adverse effect. Malabar Yard Mitigation Measures TR-3 and TR-4 (described in Section 3.15.5) are proposed to improve the V/C ratio at Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue, respectively. Implementation of Malabar Yard Mitigation Measure TR-5 (described in Section 3.15.5) is proposed to maintain the LOS along Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard. Malabar Yard Mitigation Measure TR-6 minimizes the potential roadway hazard; however, to establish the level of effectiveness, further coordination with CPUC and the City of Vernon is required.

Indirect Effects

Construction and operation of the Malabar Yard railroad improvements would not directly generate population growth or require provision of new community facilities due to the nature and extent of the railroad improvements in the vicinity of Malabar Yard and the context of the surrounding environment being an urbanized industrial setting. No indirect adverse effect would occur.

TOPIC 3.15-B	Government services

Direct Effects – Construction

Law enforcement and fire protection services in the Malabar Yard study area are provided by the City of Vernon Police Department and Los Angeles County Fire Department, respectively. As depicted on Figure 3.15-2, there is one police station and one fire station located within 0.5 mile of the Malabar Yard study area.

The Malabar Yard railroad improvements do not include residential development that would directly generate population growth or substantially increase the demand for fire protection and law enforcement services. The existing police and fire stations in the Malabar Yard study area would continue to serve the study area. The Malabar Yard railroad improvements would not result in the need for additional staffing or expansion of existing government service facilities resulting in physical impacts associated with the provision of new or physically altered government service facilities.

Standard specifications would be followed requiring staging areas to be fenced to control access to construction activities, materials, and equipment. The construction contractor would be responsible for providing fencing, no trespassing signage, security lighting, and onsite security during and after construction hours, pursuant to BNSF's standard specifications. CCR Title 8, overseen by Cal/OSHA, regulates workplace and construction worksite safety throughout California. Title 8 requires compliance with standard procedures to prevent construction worksite accidents and requires a written workplace Injury and Illness Prevention Program to be in place (CCR Title 8, Section 1502 et seq.; Pocket Guide for the Construction Industry [Cal/OSHA 2019]). Standard implementation of a construction safety and health plan during construction, in compliance with legal requirements mentioned above, would reduce risk to human health during construction by establishing protocols for safe construction, including daily safety awareness meetings and training to establish a safety culture among the workforces.

Based on these considerations, no direct adverse effect would occur.

Direct Effects – Operations

Infrastructure improvements would be constructed primarily within an existing rail yard and within the railroad or public ROW. The Malabar Yard railroad improvements do not include residential development that would directly generate population growth or substantially increase the demand for fire protection and law enforcement services. The existing police and fire stations in the Malabar Yard study area would continue to serve the study area. The Malabar Yard railroad improvements would not result in the need for additional staffing or expansion of existing government service facilities resulting in physical impacts associated with the provision of new or physically altered government service facilities. Therefore, operation of the Malabar Yard railroad improvements would not affect government facilities. No direct adverse effect would occur.

Indirect Effects

Construction and operation of any combination of design options for the Malabar Yard railroad improvements would not indirectly generate substantial population or employment growth that would cause new or increased demand for fire protection and law enforcement services. No indirect adverse effect would occur.

TOPIC 3.15-C	Business displacements and the economy

Direct Effects – Construction

Design Option 1 (49th Street Closure and 46th Street Connector)

Design Option 1 for the Malabar Yard railroad improvements at both locations (46th Street and 49th Street) would require ROW acquisitions of industrial/manufacturing properties. The Malabar Yard railroad improvements (Design Option 1 at both locations) are expected to result in the displacement of existing businesses on three parcels (APNs 6308-004-011, 6308-004-012, and 6308-004-013). The three parcels where job displacement would occur are shown in Table 3.13-2 and are classified as industrial properties (see Section 3.13, Economic and Fiscal Impacts for a description of the affected buildings and businesses). Overall, it is estimated that the ROW acquisitions required would displace approximately 48,872 square feet of building space. These ROW acquisitions may result in some property tax losses to the county and city as well as job losses. Specifically, it is expected that up to 46 jobs[2] could be displaced and property taxes[3] would decrease by $61,001 approximately every year.

Given that there is available land within and surrounding the Malabar Yard study area and that industrial businesses may not be dependent on local patronage, some relocation of businesses could be assumed (Metro 2021). Based on an FHWA study using an eight-state average percentage for businesses eligible for reestablishment benefit payment under the Uniform Relocation Act, 67 percent of the industrial businesses could be assumed to relocate in Los Angeles County (FHWA 2010). As all relocations would be performed in accordance with Uniform Relocation Act and Metro's applicable relocation program, no direct adverse effect would occur.

Design Option 2 (49th Street Closure and 46th Street Connector)

Design Option 2 would require fewer ROW acquisitions because the alignment is shifted northward within the road ROW; however, it would still affect industrial/manufacturing properties. The Malabar Yard railroad improvements (Design Option 2 at both the 46th Street and 49th Street locations) are expected to result in the demolition of one building on APN 6308-004-011 and the displacement of 9,711 square feet of building space resulting in $3,641 of property tax losses to

[2] Number of displaced jobs was estimated based on the total building square footage displaced (48,872) and the average building square footage per industrial job (1,061.5) from the ROW acquisitions.
[3] For the non-vacant partial acquisitions, lost property taxes were estimated by applying the 'percent acquisition factor' to the assessed property tax value of each parcel.

the county and city annually. Up to 9 jobs[4] could be displaced. The building was vacant at the time outreach was performed with affected property owners.

Similar to Design Option 1, as all relocations would be performed in accordance with Uniform Relocation Act and Metro's applicable relocation program, no direct adverse effect would occur.

Direct Effects – Operations

Design Options 1 and 2 (49th Street Closure and 46th Street Connector)

As discussed above and in Section 3.13, Economic and Fiscal Impacts, demolition of existing buildings and potential relocation of existing businesses associated with the Malabar Yard railroad improvements may result in a reduction in the number of jobs at existing businesses. Any combination of design options for the Malabar Yard railroad improvements is not expected to generate new permanent jobs because no additional employees are required to operate the Malabar Yard railroad improvements, and no incremental operations and maintenance costs are anticipated. Therefore, no direct adverse effect would occur.

Indirect Effects

Expenditures during construction of any combination of design options for the Malabar Yard railroad improvements would result in demand for construction materials and construction jobs. These construction expenditures are considered direct effects, which would lead to indirect effects as the output of firms in other industries increases to supply the demand for inputs to the construction industry. In addition, wages paid to workers in construction trades or supporting industries would be spent on other goods and services and provide a benefit to the economy, both locally and, to a lesser degree, regionally. Operation of the 46th Street Connector would facilitate enhanced goods movement and freight service to existing and potentially new customers in the City of Vernon. A beneficial effect would occur.

3.15.5 Mitigation Measures

Implementation of the following mitigation measure would avoid or minimize potential adverse effects related to socioeconomics and communities. Mitigation measures for the Malabar Yard railroad improvements include "MY" in the nomenclature as shown below.

MY TR-1 **Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements.** See Section 3.3, Transportation for details.

MY TR-2 **Temporary Restriping and Adding a Right-turn Overlap Phase in Westbound Direction of the Vernon Avenue/Santa Fe Avenue Intersection.** See Section 3.3, Transportation for details.

[4] Number of displaced jobs was estimated based on the total building square footage displaced and the average building square footage per job from the ROW acquisitions.

MY TR-3 **Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection.** See Section 3.3, Transportation for details.

MY TR-4 **Restriping of the Pacific Boulevard/Fruitland Avenue Intersection (Future Horizon Year 2040).** See Section 3.3, Transportation for details.

MY TR-5 **Add a New Vehicular Lane on the Fruitland Avenue Roadway Segment between Santa Fe Avenue and Pacific Boulevard (Future Horizon Year 2040).** See Section 3.3, Transportation for details.

MY TR-6 **Obtain Required Approvals for At-Grade Railroad Crossings.** See Section 3.3, Transportation for details.

3.16 Environmental Justice

3.16.1 Introduction

This section provides an evaluation of potential effects on EJ communities within the EJ study area (synonymous with the Malabar Yard socioeconomic planning area presented in Section 3.15, Socioeconomics and Communities Affected). EJ communities include minority populations and/or low-income populations. To support the evaluation, this section includes a discussion of applicable federal EJ regulations and guidelines, describes the methods used in defining EJ communities, and includes a summary of the outreach Metro and CHSRA have conducted with EJ communities. This section also includes an analysis of potential disproportionate and adverse effects on EJ populations and a discussion of how such disproportionate and adverse effects may be avoided or minimized. This analysis is based on the impacts identified in Sections 3.2 through 3.15 and discusses only those impacts that remain adverse after all mitigation measures have been considered.

The EJ analysis in this chapter is prepared pursuant to EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations and NEPA requirements. The EJ impact analysis is guided by EO 12898; EO 13166, Improving Access to Services for Persons with Limited English Proficiency (LEP); Title VI of the Civil Rights Act of 1964; U.S. Department of Transportation's Order to Address Environmental Justice in Minority Populations and Low-Income Populations; EO 13045, Protection of Children from Environmental Health Risks and Safety Risks; Americans with Disabilities Act; Presidential Memorandum accompanying EO 12898; Age Discrimination Act of 1975; Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis (EO 13990), and EO 14096, Revitalizing Our Nation’s Commitment to Environmental Justice For All.

Demographic data used in the analysis to identify low-income populations and/or minority populations within the EJ study area were derived from various sources, including the U.S. Census Bureau 2020 Decennial Census and U.S. American Community Survey 2016–2021 dataset.

3.16.2 Regulatory Framework

Federal Regulations

Title VI of the Civil Rights Act (42 United States Code § 2000(d) et seq.)

Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color, national origin, age, sex, or disability in programs receiving federal funding. Federal agencies are required to ensure that no person is excluded from participation in, denied the benefits of, or subjected to discrimination under any program or activity receiving federal financial assistance.

Federal Actions to Address Environmental Justice in Minority and Low-Income Populations (1994) (Executive Order 12898)

EO 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, was signed February 11, 1994. It directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse human health or environmental effects of federal projects and programs on minority populations and low-income populations (referred to as EJ populations in this document) to the greatest extent practicable and permitted by law. As a result, NEPA requires project recipients of federal funding to analyze environmental justice concerns (USDOT 1997). EO 12898 seeks the "fair treatment and meaningful involvement of all people regardless of race, color, sex, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations, and policies" (U.S. EPA 2017). Meaningful involvement means that: (1) potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health; (2) the public's contribution can influence the regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision-making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected.

CEQ responded to EO 12898 by issuing guidance for agencies on how to address EJ under NEPA. The CEQ EJ guidance includes general principles for addressing EJ during the NEPA process, such as considering relevant public health data; recognizing interrelated cultural, social, occupational, historical, or economic factors; and developing effective public participation strategies.

Section 1-102 of EO 12898 was amended on January 27, 2021. The amended order creates a government-wide initiative with the goal of delivering 40 percent of the overall benefits of relevant federal investments to disadvantaged communities and tracks performance toward that goal through the establishment of an EJ Scorecard. The order also establishes a new White House Environmental Justice Interagency Council and a White House Environmental Justice Advisory Council.

Revitalizing Our Nation's Commitment to Environmental Justice for All (Executive Order 14096)

EO 14096 was signed on April 21, 2023, establishing a policy for federal agencies to prioritize investment in EJ communities, consider the cumulative effects of legacy pollution and historic federal actions on EJ communities, and integrate EJ into the core mission of each federal agency. This EO is an update to EO 12898. Under EO 14096, EJ is now evaluated based simply on disproportionate and adverse impacts. The Fact Sheet that accompanied the EO indicates that "The Executive Order uses the term "disproportionate and adverse" as a simpler, modernized version of the phrase "disproportionately high and adverse" used in EO 12898. Those phrases have the same meaning but removing the word "high" eliminates potential misunderstanding that agencies should only be considering large disproportionate effects."

United States Department of Transportation Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (2012) (United States Department of Transportation Order 5610.2(c))

In 1997, the United States Department of Transportation (USDOT) issued the Order to Address Environmental Justice in Minority Populations and Low-Income Populations (Order 5610.2(a)), which is used by USDOT to comply with EO 12898, and sets guidelines to ensure that all federally funded transportation-related programs, policies, or activities that have the potential to adversely affect human health or the environment involve a planning and programming process that explicitly considers effects on minority and low-income populations.

USDOT Order 5610.2(a) defines low-income as a person whose median household income is at or below the Department of Health and Human Services (DHHS) poverty guidelines. Minority is defined as a person who is Black; Hispanic or Latino, regardless of race; Asian American; American Indian and Alaska Native; or Native Hawaiian and Other Pacific Islander.

On May 16, 2021, USDOT issued USDOT Order 5610.2(c), which is an update to the 1997 order and subsequent USDOT Order 5610.2(b), which had removed many requirements from the 1997 order. DOT Order 5610(c) rescinded the changes in USDOT Order 5610.2(b) in full. USDOT Order 5610.2(c) (2021) defines a disproportionately high and adverse effect as one that would meet either characteristic below.

- The adverse effect would be predominantly borne by a minority and/or low-income population.
- The adverse effect suffered by the minority population and/or low-income population would be appreciably more severe or greater in magnitude than the adverse effect suffered by the non-minority and/or non-low-income population.

Improving Access to Services for Persons with Limited English Proficiency (2000) (Executive Order 13166)

EO 13166, Improving Access to Services for Persons with Limited English Proficiency, was signed on August 11, 2000. EO 13166 requires development and implementation of a system for federally funded programs that provides meaningful access for limited-English proficiency (LEP) populations.

Federal Transit Administration Circular C 4702.1B, Title VI Requirements and Guidelines for Federal Transit Administration Recipients

FTA Circular C 4702.1B was issued to provide federal grant recipients with a framework for integrating principles of EJ into public transportation decision-making processes. Circular 4702.1B provides guidance on the development and implementation of a Title VI plan, including inclusive public participation requirements and LEP assistance. The guidelines provide instructions for a Four-Factor Analysis to determine language services that should be provided and how to develop a Language Assistance Plan.

Federal Transit Administration Circular C 4703.1B, Environmental Justice Policy Guidance for Federal Transit Administration Recipients

FTA Circular C 4703.1 was issued to provide federal grant recipients with guidance for incorporating EJ principles into projects and activities that receive funding from FTA. Circular 4703.1 defines low-income as person whose household is at or below the DHHS poverty guidelines. The Circular further encourages recipients to use a locally developed threshold, such as that used for the FTA grant program, which is 150 percent of the poverty line.

Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis (Executive Order 13990)

EO 13990 was signed on January 20, 2021, and seeks to prioritize EJ in federal decision making.

Protection of Children from Environmental Health Risks and Safety Risks (Executive Order 13045)

EO 13045 requires federal agencies to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children and ensure that its regulatory actions address disproportionate risks to children that result from environmental health risks or safety risks.

Americans with Disabilities Act (42 United States Code Sections 12101 to 12213)

ADA prohibits, under certain circumstances, discrimination based on disability.

Age Discrimination Act of 1975 (42 United States Code Sections 6101-6107)

The Age Discrimination Act of 1975 prohibits discrimination on the basis of age in programs or activities receiving federal funding.

Uniform Relocation Assistance and Real Property Acquisition Policies Act (42 United States Code Chapter 61)

The Uniform Relocation Assistance and Real Property Acquisition Policies Act ensures that persons displaced because of a federal action or an undertaking involving federal funds are treated fairly, consistently, and equitably so that such persons would not suffer disproportionate injuries because of projects designed for the benefit of the public as a whole.

The Environmental Justice Policy Guidance for FTA Recipients (77 FR 137, July 17, 2012) provides recommendations to state departments of transportation, metropolitan planning organizations (MPO), public transportation providers, and other recipients of FTA funds and the FRA, on how to fully engage EJ populations in the decision-making process and how to analyze or determine whether EJ populations would be subjected to disproportionately high and adverse human health or environmental effects as a result of a transportation project.

For FRA, this means following the three guiding principles of EJ:

- To avoid, minimize, and mitigate disproportionately high and adverse effects on minority populations and low-income populations;
- To ensure the full and fair participation by all potentially affected communities in the decision-making process; and
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

When minority populations and/or low-income populations are identified and an EJ analysis is required, a determination must be made as to whether there would be a disproportionately high and adverse effect on human health or the environment. This requires comparing the burdens and benefits that would be experienced by EJ populations with the burdens and benefits that would be experienced by non–EJ populations.

State and Local Regulations

California Government Code 65040.12(e)

California Government Code 65040.12(e) defines environmental justice as the "fair treatment and meaningful involvement of people of all races, cultures, incomes, and national origins, with respect to the… enforcement of environmental laws, regulations, and policies." Section 65040.12(e)(2)(D) requires agencies to, at a minimum, meaningfully consider input from those most impacted by pollution during environmental and land use decision making.

Metro's Measure M (2016)

Measure M: The Los Angeles County Traffic Improvement Plan was a ballot measure passed by Los Angeles County voters in 2016. Measure M raises money (through a no-sunset half cent sales tax) to ease traffic congestion; expand rail and rapid transit system; repave local streets, potholes, and synchronize signals; make public transportation more accessible, convenient, and affordable for seniors, students, and the disabled; earthquake-retrofit bridges; and create jobs, reduce pollution, and generate local economic benefits. Measure M includes a low-income fare subsidy program and would benefit low-income households.

Metro Equity Platform

In 2018, the Metro Board adopted the Equity Platform that guides how the agency works to address inequities and create more equitable access to opportunity. It considers existing disparities and evaluates how the Project can effectively reduce disparities between communities through transit service, station amenities, and safety infrastructure that meets the needs of the historically underserved community. The Equity Platform is designed to inform, shape, and guide every facet of the agency's business, on a continuing basis, to shape projects, investments, and new initiatives.

The four main areas of action, called pillars of the Equity Platform, are:

- Define and Measure;
- Listen and Learn;
- Focus and Deliver; and,
- Train and Grow.

As part of the Equity Platform framework, Metro created Equity Focus Community (EFC) designations to help identify areas with the greatest mobility needs for equity prioritization. EFCs were identified by areas by mapping areas with higher concentrations of more burdened populations, including low-income households earning less than $60,000 per year; Black, Indigenous, or People of Color populations; and households without a vehicle.

Metro Public Participation Plan (2022)

Metro's Public Participation Plan outlines its commitment and methods to comply with Title VI, EO 12898, EO 13166, FTA Circulars C 4702.1B regarding responsibilities to LEP persons, and FTA Circular C 4703.1 regarding the integration of EJ principles into the transportation decision-making process. The plan is also consistent with Section 162(a) of the Federal-Aid Highway Act of 1973 and The Age Discrimination Act of 1975.

3.16.3 Methods for Evaluating Environmental Effects

This analysis uses a six-step process to determine impacts on low-income populations and minority populations, as outlined below and described in the following subsections:

1. Identify EJ study area;
2. Determine whether there are low-income populations and/or minority populations within the EJ study area that would potentially be affected by the Build Alternative;
3. Conduct a comparison of minority populations and low-income populations to the county average or local benchmark to identify EJ communities for further analysis;
4. Identify additional populations, if any, that may be considered EJ communities through other data sources, such as local planning documents, site visits, and input from public engagement;
5. Identify adverse effects for each resource area and determine whether adverse effects remain after implementation of mitigation measures; and
6. Determine if remaining adverse effects would be predominantly borne by the EJ communities identified in Steps 2 through 4 or would have a disproportionate and adverse effect on these EJ communities.

Definition of the Environmental Justice Study Area

The EJ study area is also referred to as the socioeconomic planning area and is comprised of the City of Vernon, located in Census Tract 9800.16. Los Angeles County is the Community of Comparison, with which the effects of Build Alternative are compared to identify the potential for disproportionate and adverse effects borne by minority populations and low-income populations within the EJ study area.

Identification of Minority and Low-Income Populations

The American Community Survey 5-Year 2021 data were reviewed at the census tract level to determine the presence of minority populations and low-income households in the EJ study area. Census tract data were verified against 2020 Decennial Census data at the block level to help identify the locations of specific EJ communities nearest to the Project footprint for the design options considered.

The following definitions were used to identify minority populations and low-income populations:

- Minority Individuals: Individuals who identify as Black or African American; Hispanic or Latino, regardless of race; Asian; American Indian and Alaska Native; or Native Hawaiian and Other Pacific Islander; some other race alone, or two or more races.
- Low-Income: Households with income below 150 percent of the U.S. Census poverty threshold, in accordance with FTA Circular 4703.1 (August 15, 2012).
- A low-income population is considered any readily identifiable group of low-income persons who live in geographic proximity and, if circumstances warrant, geographically dispersed or transient persons who will be similarly affected by a proposed USDOT program, policy, or activity, in accordance with USDOT Order 5610.2c.

Determination of Environmental Justice Communities

As identified in the *Environmental Justice Guidance under the National Environmental Policy Act* (CEQ 1997), minority populations should be defined when:

- The minority population of the affected area exceeds 50 percent.
- The minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

As described in Section 3.15, the minority population in Los Angeles County is 74.5 percent. For the purpose of this analysis, a census tract identified as having a minority population that is meaningfully greater than the community of comparison occurs when the percentage of minority persons in a census tract is greater than 110 percent of the minority population in Los Angeles County, which is 82.0 percent.

The DHHS issues poverty guidelines for the 48 contiguous states each year. The poverty guidelines, sometimes referred to as the federal poverty level, are based on household size. In 2022, the federal poverty level for a household size of 4 was $26,500. FTA Circular 4703.1 references Public Law 112-141, which includes a definition of low-income individuals to mean an "individual whose family income is below 150 percent of the poverty line."

For this purposes of this analysis, a community is considered an EJ community when the median income is below 150 percent of the federal poverty level, which would be $39,750. The 2019 Metro Equity Platform identifies an EFC community if the household income is less than $60,000, which reflects incomes in the Los Angeles area. The low-income populations identified within this chapter are consistent with the communities identified as EFC communities by Metro.

Identification of Additional Environmental Justice Communities

The City of Vernon is primarily an industrial and commercial area with few households and 328 residents. No additional EJ communities were identified.

Identification of Adverse Effects Before and After Mitigation

To determine the potential for the Malabar Yard railroad improvements to result in disproportionate and adverse human health or environmental effects on minority populations and low-income populations, the effects discussed in Sections 3.2 through 3.15 of this document were reviewed and the likelihood of any of these effects to affect minority populations and low-income populations was assessed. Realizing that the City of Vernon contains a small residential population, outreach to local stakeholders was also conducted to identify potential effects on EJ communities that had not been considered through analysis of the resource areas evaluated in Sections 3.2 through 3.15 of this document. Community input provided through the outreach process is summarized in Section 3.16.4. No additional effects were identified.

Temporary construction and permanent effects throughout operation of the Malabar Yard railroad improvements prior to mitigation were identified for all environmental topics. Adverse effects were then reviewed to determine whether implementation of proposed infrastructure and mitigation measures would reduce the adverse effects. Where the Malabar Yard railroad improvements would result in no adverse effects on populations in general, and thereby not disproportionately affect minority populations and low-income populations, no further analysis was conducted.

Evaluation of Disproportionate and Adverse Effects on Environmental Justice Communities

Adverse effects that cannot be mitigated were then compared to the EJ communities' existing conditions to determine if there would be a disproportionate and adverse effect on an EJ population (e.g., an adverse impact that is predominantly borne by an EJ population or is appreciably more severe or greater in magnitude than the adverse effect that would be suffered by the non-minority population and/or non-low-income population).

The assessment of whether adverse effects would be disproportionate and adverse included consideration of:

- The location of adverse effects in relation to minority populations and low-income populations;
- The severity of the adverse effect and the success of the proposed mitigation measures in reducing the effect;
- Whether mitigation measures reduce effects equally for both minority populations and low-income populations as for non-minority populations and non-low-income populations; and,
- The benefits that minority populations and low-income populations would receive from the Malabar Yard Railroad Improvements.

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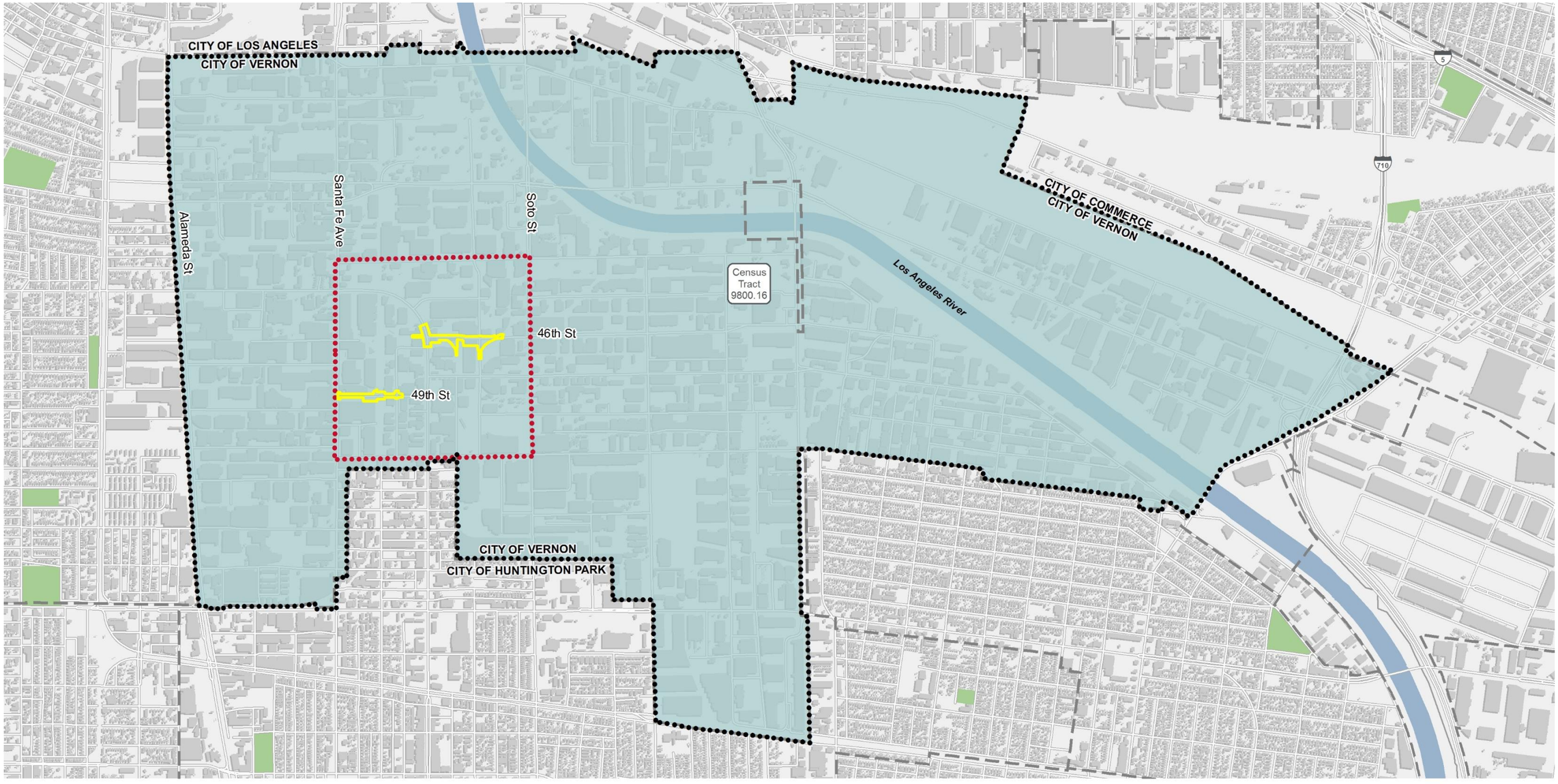
Figure 3.16-1 Malabar Yard Study Area and Environmental Justice Study Area



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3.16.4 Outreach to Environmental Justice Communities

EO 12898 requires that federal agencies ensure effective public participation and access to information. Consequently, a key component of compliance with EO 12898 is outreach to potentially affected minority populations and/or low-income households to discover issues of importance that may not otherwise be apparent. Outreach to affected communities has been, and will continue to be, conducted as part of Metro and CHSRA's decision-making process. Public involvement activities are intended to meet or exceed legal requirements in the FTA Circular C 4702.1B, regarding responsibilities to LEP persons, and FTA Circular C 4703.1, regarding the integration of EJ principles into the transportation decision-making process (Metro 2022).

The public involvement process is geared toward the inclusion of all stakeholders, with additional outreach efforts taken to ensure the involvement of EJ communities. The *Link US Public Outreach Plan* (Appendix R of the EIS/SEIR) outlines multiple outreach methods to ensure Project information is widely accessible and comprehensible, allowing the minority populations and low-income populations the opportunity to participate meaningfully in the process and provide feedback. The *Link US Public Outreach Plan* is a living document and has been revised at certain milestones to incorporate input from communities, update demographic information as needed, and adjust outreach methods and LEP considerations accordingly.

Metro is taking steps to provide meaningful access to those LEP individuals expected to be most regularly encountered. At the onset of the Project (and when Malabar Yard railroad improvements were deemed necessary for potential impacts the BNSF West Bank Yard), the project team conducted a demographic survey of the Malabar Yard study area to determine the demographic makeup of census data to determine the LEP populations and the languages that would initially be used for translation of project materials. The *Link US Public Outreach Plan* summarizes demographics in the EJ study area, identifies community group stakeholders, and identifies LEP populations. The initial version of the *Link US Public Outreach Plan* prepared in 2016 provided for print and digital materials to be provided in English, Spanish, Chinese (simplified), and Japanese, based on several of the communities surrounding LAUS – Chinatown, Little Tokyo, and Olvera Street. All public notices indicated that translation for other languages was available upon request. Based on feedback from stakeholders and the public, the *Link US Public Outreach Plan* was updated after the NOI scoping meeting to indicate that print and digital materials would also be provided in Vietnamese, Korean, Khmer (Cambodian).

The current version of the *Link US Public Outreach Plan* indicates that translation services will be made available at public and stakeholder meetings as appropriate. Meeting notification materials are advertised in multiple languages, including English, Spanish, Chinese (simplified), Japanese, Vietnamese, Korean, and Khmer (Cambodian), with additional interpretation services offered upon stakeholder request.

The outreach conducted to date is fully documented in Chapter 8.0, Public and Agency Outreach, of the EIS/SEIR. An extensive public and agency outreach program will be conducted throughout the environmental review process and will continue through the design and construction phases.

Revised Notice of Intent and Public Information Materials

On September 17, 2020, CHSRA and Metro released a Revised NOI in response to the potential need for railroad improvements at Malabar Yard in the City of Vernon. Issuance of the Revised NOI initiated a 30-day scoping process to solicit public and agency input regarding the Malabar Yard railroad improvements for inclusion in the development of the Draft EIS for the Link US Project.

The Revised NOI was published in the *FR* and distributed to key stakeholders through a range of outreach methods and activities, including newspaper advertisements, social media, press releases, mailings, and targeted calls.

CHSRA and Metro advertised the virtual Public Scoping Meeting and comment period in the following newspapers:

- *Los Angeles Times* on September 21, 2020. The newspaper circulates throughout Los Angeles.
- *Los Angeles Downtown News* on September 21, 2020. The newspaper circulates mostly in Downtown Los Angeles.
- *Los Angeles Daily News* on September 21, 2020. The newspaper circulates throughout Los Angeles.
- *La Opinión* on September 21, 2020. This release was published in Spanish. The newspaper circulates throughout Southern California.
- *Rafu Shimpu* on September 22, 2020. This newspaper publishes to a Japanese audience. The newspaper circulates throughout Los Angeles.
- *Chinese Daily News* on September 21, 2020. This release was published in Chinese (Simplified). The newspaper circulates throughout Los Angeles.

The virtual Public Scoping Meeting was also promoted via Metro Press Release as well as through Metro's *The Source* article on October 7, 2020.

The advertisements included an invitation to the virtual Public Scoping Meeting with information regarding the virtual meeting time and weblink. The advertisements invited the public to attend the virtual Public Scoping Meeting, provided information regarding the meeting time and place, meeting format, the 30-day public scoping period, the publication of the Revised NOI, Project website address, and instructions for submitting public comments or requesting special accommodations.

Facebook posts were developed and posted on Metro's Regional Rail Facebook page on September 18 and 30 and October 6, 8, 12, and 16, 2020. The posts consisted of information about the virtual Public Scoping Meeting, including date, time, and a link to the Project website. Additionally, a meeting reminder, a meeting recap, and a thank you post were distributed on Metro's Regional Rail Facebook page.

A virtual Scoping meeting tri-fold pamphlet was distributed via certified mail on September 29, 2020, to the mailing addresses that are publicly available for properties traversed by the Project footprint for the design options considered. All properties in the jurisdictional limits of Vernon and properties in the far northern portion of Huntington Park were also mailed the tri-fold pamphlet on October 25, 2020. The tri-fold pamphlet contained general Project information, a link to the Project website and Virtual Meeting Room (VMR), contact information, and virtual Public Scoping Meeting information. The tri-fold pamphlet that was mailed also contained the information translated into Spanish, Chinese (simplified), and Japanese. A Korean version of the tri-fold pamphlet was also made available on the Project website and in the VMR.

This information on the virtual Public Scoping Meeting was also provided to all recipients in the stakeholder database in multiple email blasts to approximately 2,533 emails of interested stakeholders existing in the database. Three email blasts were sent prior to the virtual Public Scoping Meeting on September 22, 2020, and October 6 and 8, 2020; each included translated meeting information for Spanish, Chinese (simplified) and Japanese. After the virtual Public Scoping Meeting, email blasts were also sent on October 12 and 16, 2020, to remind stakeholders of the 30-day public comment period.

Metro performed additional outreach with stakeholders in the City of Vernon. During and after release of the Revised NOI, Metro performed substantial outreach with stakeholders and potentially affected property owners in the City of Vernon. In April 2020, Metro began conducting monthly virtual Zoom meetings with staff from the City of Vernon (Public Works and Administration Departments). In addition to the ongoing meetings with the City of Vernon staff to share Project updates and design development, Metro also solicited feedback from the Business & Industry Commission and the Chamber of Commerce. Additionally, individual calls, emails, and zoom meetings were held with the 14 potentially affected property owners and/or business operators to seek feedback on the design characteristics of the Malabar Yard railroad improvements and the preliminary impacts of the design options considered.

Virtual Scoping Meeting

On October 8, 2020, during the Revised NOI comment period, CHSRA and Metro held a virtual Public Scoping Meeting, from 6:00 p.m. to 8:00 p.m. which was through a live Zoom virtual presentation accessible via LinkUnionStation.com. During the virtual Public Scoping Meeting, simultaneous live meetings with interpreters were offered concurrent with the English presentation in Spanish, Chinese (simplified) and Japanese concurrent with the main meeting in English. Video recordings and PDFs of the translated PowerPoint presentations were made available to the public via the VMR. Americans with Disabilities Act accommodations and translations were made available by calling a designated information phone line or through California Relay Service at 711 at least 72 hours in advance. The virtual Public Scoping Meeting included a live presentation and a public comment session, where comments were accepted digitally and orally.

The virtual Public Scoping Meeting provided the public and government agencies the opportunity to receive information on the Revised NOI scoping process and how to provide comments relative to the railroad improvements. Approximately 107 persons attended the virtual Public Scoping

Meeting. Out of the 107 attendees, there were 102 attendees on the English presentation, 1 attendee on the Spanish Presentation, and 4 attendees on the Japanese presentations. Stakeholders who attended the meeting included elected officials, federal agencies, community organizations, business organizations, and individual stakeholders.

In addition to the virtual Public Scoping Meeting, a VMR was created and made available so members of the public could easily browse information related to the overall Project, the Revised NOI, and specifically the Malabar Yard railroad improvements, at their own leisure. In the VMR, five stations were established to provide Project-related information in large-scale PDF format that could be clicked on and zoomed in for maximum readability. The content of the five Project stations was made available in English, Spanish, Chinese Simplified, and Japanese. Collateral materials including the fact sheet and frequently asked questions were also provided in the VMR as weblinks. To ensure the multilingual needs of the community were met, the fact sheet and frequently asked questions were available in Spanish, Chinese (simplified), Japanese, Korean, Khmer (Cambodian), and Vietnamese.

Public Input

Meetings were held with local officials; public, local, and regional organizations; and government agencies, as listed in Table 3.16-1 and discussed in detail in the *Link US Public Outreach Plan*. Outreach activities conducted by Metro and FRA (previous NEPA lead agency at the time) for minority populations and low-income populations to be involved throughout the Project development included advertising meetings in Spanish, Chinese (simplified), and Japanese, making Project-related materials available in Spanish, Chinese (simplified), and Japanese, and having interpreters available at public meetings in areas that included Hispanic, Chinese, and Japanese communities.

Outreach activities were conducted to determine the extent of the affected populations and to gather information on the best ways of communicating with all populations. Through review of input received from the public and corresponding environmental analysis, staff identified whether the railroad improvements would potentially disproportionately affect any of the EJ communities relative to the potential benefit gained by the community from the Malabar Yard railroad improvements, and appropriate alternatives or changes to the Project or required mitigation measures were implemented. As listed in Table 3.16-1, starting in April 2020, various outreach meetings were held in Vernon, including meetings with the City of Vernon staff to identify EJ communities and community leaders and identify strategies for outreach to their communities and gain their input. A full list of these meetings is provided in Chapter 8, Public and Agency Outreach, of the EIR.

Table 3.16-1. Outreach to Environmental Justice Stakeholders and Community Groups

Stakeholder	Date
City of Vernon	April 22, 2020 July 8, 2020 August 8, 2020 September 2, 2020 October 7, 2020 October 8, 2020 - Revised NOI Scoping Meeting December 2, 2020 January 20, 2020 March 3, 2021
City of Vernon Business and Industry Commission and Chamber of Commerce	August 13, 2020 October 8, 2020 - Revised NOI Scoping Meeting February 11, 2021
Vernon Business Stakeholder Meeting	October 8, 2020 - Revised NOI Scoping Meeting February 2021 – E-blast for upcoming stakeholder meeting February 10, 2021

Metro Equity Platform and EJ Community Input

The Project delivers on the "Listen and Learn" Pillar of the Equity Platform. As described above, during the outreach and environmental review process, there were numerous public engagement meetings with stakeholders, including the VMR for EJ communities during COVID-19 restrictions. Project information and frequently asked questions were provided in English, Spanish, Chinese Simplified, and Japanese.

Input provided by stakeholders at EJ outreach events and briefings are summarized in Table 3.16-2. The summary of stakeholder input below is specific to Malabar Yard railroad improvements in the City of Vernon and was received during individual affected property owner meetings and public meetings in Vernon including the February 2021 Business Stakeholder Meeting and Vernon Business Industry Commission Meetings. This input was reviewed and considered during the analysis for each resource area, identification of potential impacts, design revisions that would avoid or reduce impacts, and development of mitigation measures where needed. Based on substantial outreach performed in the City of Vernon, revisions to the design of the Malabar Yard railroad improvements at both locations were made (49th Street Closure Design Option 2 [Hammerhead Cul-de-Sac] and 46th Street Connector Design Option 2 [Northern Alignment]).

Table 3.16-2. Summary of Stakeholder Input from Environmental Justice Communities

Resource Area	Input Summary	Summary of How Feedback was Addressed
Businesses	• Effects on businesses and property values • Inquiries about procurement for work • Truck deliveries	• An analysis of potentially impacted driveways for all affected property owners was performed and the design was updated to minimize impacts on adjacent properties based on property owner/tenant feedback (see Section 3.3). • Small and Disadvantaged Businesses interested in bidding work are encouraged to access Metro's Vendor Portal to learn about opportunities, bonding assistance, and become a certified Disadvantaged Business Enterprise or Small Business Enterprise. • Individual meetings have been conducted with businesses that would be impacted by the Malabar Yard railroad improvements and coordination will continue through design. • Full or partial acquisition of properties will follow the Uniform Act to ensure that affected businesses and property owners receive fair market value compensation, considering the uses and purposes of the property.
Community Impacts	• Property values • Property acquisition	• Full or partial acquisition of properties will follow the Uniform Act to ensure that affected businesses and property owners receive fair market value compensation, considering the uses and purposes of the property.
Noise and Vibration	• Vibration from increased train traffic and annoyance to businesses	• A vibration analysis was conducted to identify the potential for annoyance. There are no vibration-sensitive land uses or businesses in the Malabar Yard study area. The 1,000-foot connector track is proposed between two active rail lines and is not expected to result in vibration that reaches to a level of annoyance (see Section 3.6).
Safety	• Safety measures to block access to tracks. • Delay to emergency responders during railroad crossing gate down time.	• Safety enhancements would be constructed at both new and existing at-grade crossings to include traffic and railroad signals, flashers and gates, and new medians (see Section 3.14). • The design options at the 49th Street cul-de-sac include fencing along the western property line of Malabar Yard and bollards at the western property line at 49th Street in addition to replacement of sidewalk and asphalt as part of cul-de-sac improvements (see Section 3.14). • Planned roadway reconfigurations and associated modifications would be coordinated and approved by the City's Public Works Department to ensure adequate access for emergency service providers throughout the Malabar Yard study area (see Section 3.14).
Transportation	• Traffic congestion	• A traffic analysis was conducted to determine impacts to the traffic circulation system. Roadway reconfigurations, modifications, traffic signals, and striping options were identified to minimize traffic congestion as a result of the Malabar Yard railroad improvements (see Section 3.3).

3.16.5 Affected Environment

This section describes the affected environment for EJ in the EJ study area, including minority populations and low-income populations and EJ demographics for Los Angeles County, the Community of Comparison.

Due to the industrial nature of the City of Vernon, the city has traditionally limited housing due to incompatibility with industrial uses. The city owns and leases 31 of its 78 housing units through a lottery system. The Vernon General Plan identifies specific locations where a limited amount of new non-city-owned housing could be constructed. There are no existing residences within the Malabar Yard study area where the railroad improvements would be constructed. Table 3.16-3 provides a summary of EJ demographics for Los Angeles County and the EJ Study area. Low-income households comprise 14.2 percent of the population in Los Angeles County compared to zero in the EJ study area. Minority residents represent 74.5 percent of the population in Los Angeles County, compared to 94.2 percent of the EJ study area.

Table 3.16-3. Community of Comparison and Environmental Justice Study Area Demographic Characteristics

Characteristics	Los Angeles County (Community of Comparison)	Environmental Justice Study Area
Total Population	10,019,635	328
Minority Population (%)	74.5	94.2
Low-Income Households (%)	14.2	0.0

Minority Populations

As described in Section 3.15 and Table 3.16-4, the minority population in the City of Vernon (Malabar Yard EJ study area) is 94.2 percent. Minority populations in the affected community occur when the percentage of minority persons in any census tract is greater than 110 percent of the minority population in Los Angeles County (82.0 percent). The Malabar Yard EJ study area has a minority population that exceeds the 82.0 percent threshold; therefore, it is considered an EJ community.

Low-Income Populations

The Census Tract within the Malabar Yard EJ study area does not contain populations that meet EJ criteria of low-income, as shown in Table 3.16-4. Section 3.15, Socioeconomics and Communities Affected contains a detailed discussion of the demographic and community characteristics of the Malabar Yard socioeconomic planning area, which is synonymous with the Malabar Yard EJ study area and encompasses the City of Vernon.

3.16.6 Environmental Consequences

This section provides an evaluation of potential effects on EJ communities within the EJ study area to determine potential disproportionate and adverse effects on EJ communities and how such disproportionate effects may be avoided or minimized. The methods used to determine effects are presented above.

USDOT Order 5610.2(c) requires mitigation measures that would be implemented, offsetting benefits to EJ communities, and comparative impacts and similar existing system elements in non-minority and non-low-income areas be considered when determining impacts to EJ communities. All environmental topics were reviewed to identify those that would not result in adverse effects after mitigation, based on the analysis described in Sections 3.2 through 3.15 of this document. Table 3.16-5 includes all topics considered and identifies which topics were eliminated from further EJ analysis. The topics with no adverse effect in the “summary of effects” column were not considered for additional EJ analysis because there would be no potential for disproportionate adverse effects to EJ communities. If adverse effects would remain after implementation of mitigation measures, those topics were advanced for further EJ analysis to determine potential for disproportionate and adverse effects on EJ communities.

Table 3.16-4. Minority and Low-Income Populations in Environmental Justice Study Area

Geographic Area	Minority Populations			Low-Income Populations			Metro EFC [b]
	Non-White/ Minority (%)	Percent Minority in Affected Community >110% of Community of Comparison (82.0%)	Minority EJ Population?	Median Household Income ($)	Median Household Income <150% of Department of Health and Human Services Poverty Guideline ($39,750)?	Low-Income EJ Population?	
Community of Comparison							
Los Angeles County	74.5	—	—	76,367	—	—	
Affected Community							
Census Track 9800.16 *(Malabar Yard Railroad Improvements; Vernon)*	94.2	Yes	Yes	62,000	No	No	No

Source: U.S. Census Bureau 2021c
Notes:
[a] ***U.S. Census Bureau 2021c 5-Year Estimate, Table S0601.***
[b] ***For purposes of this evaluation, EJ Populations are considered Equity Focus Communities pursuant to Metro's Equity Platform.***
EJ=Environmental Justice; EFC=Equity Focus Community

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Table 3.16-5. Topics for Further Environmental Justice Analysis

Environmental Resource Topic	Summary of Effects	Proposed Mitigation	Effect After Mitigation	Topic Eliminated from Further EJ Analysis
Land Use	Construction – Adverse Effect • Construction activities adjacent to businesses could cause temporary land use incompatibilities (traffic detours, lane width reductions, commercial driveway access, road closures). • No physical or perceived division of an established community would occur. Operations – No Adverse Effect Indirect – No Adverse Effect	Construction **MY TR-1: Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements**	Construction: No Adverse Effect Operations: No Adverse Effect Indirect: No Adverse Effect	Yes
Transportation	Construction – Adverse Effect • The applicable V/C ratio threshold would be exceeded at two intersections (Intersection #5: Vernon Avenue/Santa Fe Avenue and Intersection #6: Santa Fe Avenue/Pacific Boulevard). • Temporary construction-related roadway hazards in the traffic study area to motorists, pedestrians, and bicyclists. • Temporary impacts to emergency response and access, due to potential delays in response times for emergency vehicles. • Impacts to transit, pedestrian and bicycle modes of travel. Operations – Adverse Effect and Beneficial Effect *Adverse*	Construction **MY TR-1: Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements** **MY TR-2: Temporary Re-Striping and Adding a Right-turn Overlap Phase in Westbound Direction of Vernon Avenue/Santa Fe Avenue Intersection** **MY TR-3: Re-Striping of Santa Fe Avenue/Pacific Boulevard Intersection** Operations **MY TR-4: Re-Striping of Pacific Boulevard/Fruitland Avenue**	Construction: No Adverse Effect Operations: Adverse Effect Indirect: No Adverse Effect	No – Operations advanced for further analysis

Table 3.16-5. Topics for Further Environmental Justice Analysis

Environmental Resource Topic	Summary of Effects	Proposed Mitigation	Effect After Mitigation	Topic Eliminated from Further EJ Analysis
	• The applicable V/C ratio threshold would be exceeded at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard). • The New Railroad Crossing #5 at the intersection of Seville Avenue and 46th Street would introduce a potential roadway hazard due to queuing that would cause southbound vehicular traffic to extend across 46th Street. On Seville Avenue south of 46th Street, two separate sets of gate arms proposed near each other would introduce a potential roadway hazard due to northbound and southbound vehicle queuing. The potential roadway hazard that may occur from vehicle queuing along Seville Avenue, may also impede access for emergency responders, cause schedule delays to transit services, or disruption of pedestrian and bicycle access. *Beneficial* • Beneficial operational efficiency for freight trains by separating freight and passenger train traffic. Indirect Effects – No Adverse Effect	**Intersection (Future Horizon Year 2040)** **MY TR-5: Add a New Vehicular Lane on Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard Roadway Segment (Future Horizon Year 2040)** **MY TR-6: Obtain Required Approvals for At-Grade Railroad Crossings**		

Table 3.16-5. Topics for Further Environmental Justice Analysis

Environmental Resource Topic	Summary of Effects	Proposed Mitigation	Effect After Mitigation	Topic Eliminated from Further EJ Analysis
Visual Quality and Aesthetics	Construction – No Adverse Effect Operations – No Adverse Effect Indirect – No Adverse Effect	N/A	Construction: No Adverse Effect Operations: No Adverse Effect Indirect: No Adverse Effect	Yes
Air Quality and Global Climate Change	Construction – No Adverse Effect[1] Operations – No Adverse Effect Indirect – Beneficial effect • Shorter route would provide a reduction in train miles and reduce truck VMT.	**MY AQ-1: Fugitive Dust Control** **MY AQ-2: Compliance with U.S. EPA's Tier 4 Exhaust Emission Standards and Renewable Diesel Fuel for Off-Road Equipment**	Construction: No Adverse Effect Operations: No Adverse Effect Indirect: Beneficial Effect	Yes
Noise and Vibration	Construction – No Adverse Effect Operations – No Adverse Effect Indirect – No Adverse Effect	N/A	Construction: No Adverse Effect Operations: No Adverse Effect Indirect:	Yes

[1] No adverse effect effects related to air quality would occur with the sole implementation of the Malabar Yard railroad improvements. When considered in combination with the Build Alternative, an adverse effect would occur; therefore, Mitigation Measure MY AQ1 and MY AQ-2 are applicable.

Table 3.16-5. Topics for Further Environmental Justice Analysis

Environmental Resource Topic	Summary of Effects	Proposed Mitigation	Effect After Mitigation	Topic Eliminated from Further EJ Analysis
			No Adverse Effect	
Biological and Wetland Resources	Construction – Adverse Effect • Potential for vegetation removal to impact nesting birds protected by MBTA. • Conflict with Tree Removal Ordinance. Operations – No Adverse Effect Indirect – Adverse Effect Trenching, grading, soil compaction, and the placement of fill or impervious surfaces within the driplines of trees could lead to root damage ultimately resulting in death of the tree.	Construction **MY BIO-1: MBTA Species** **MY BIO-2: Protected Trees**	Construction: No Adverse Effect Operations: No Adverse Effect Indirect: No Adverse Effect	Yes
Floodplains, Hydrology, and Water Quality	Construction – Adverse Effect • Construction could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas, resulting in erosion on adjacent properties. • Sediments, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete related waste may be spilled or leaked and have the potential to be transported via stormwater into the Los Angeles River. Surface runoff exposure to soils containing these contaminants could reduce water quality of the Los Angeles River at Reach 2. • Construction activities could result in exceedance of stormwater and	Construction **MY HWQ-1: Prepare and Implement a SWPPP** **MY HWQ-2: Comply with Local Dewatering Requirements** **MY HWQ-3: Comply with Local Dewatering Requirements for Contaminated Sites** **MY HWQ-4: Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses**	Construction: No Adverse Effect Operations: No Adverse Effect Indirect: No Adverse Effect	Yes

Table 3.16-5. Topics for Further Environmental Justice Analysis

Environmental Resource Topic	Summary of Effects	Proposed Mitigation	Effect After Mitigation	Topic Eliminated from Further EJ Analysis
	non-stormwater discharge if runoff is not properly managed. Operations – Adverse Effect • Alteration of existing drainage patterns could change the rate of stormwater runoff entering the public storm drain system. • Reconstruction of impervious surfaces could affect drainage in a manner that could change the rate of stormwater runoff entering the public storm drain system. • Minor amounts of metals from brake dust, oil and grease could discharge into the existing drainage systems. Indirect – Adverse Effect • Acquisition of parcels with existing IGP include provisions to treat stormwater discharges that include pollutants. If these processes are not continued, industrial stormwater may not be treated and could negatively affect the storm drain system.	**MY HAZ-1: Prepare a Construction Hazardous Materials Management Plan** Operations **MY HWQ-5: Final Water Quality BMP Selection (City of Vernon and Railroad ROW)**		
Geology, Soils, and Seismicity	Construction – Adverse Effect • Construction activities may be subject to hydrocollapse. • There is an increased risk of damage from expansive soils, which could result in uplift pressures that could damage track, signal, safety, and civil improvements.	Construction and Operations **MY GEO-1: Prepare Final Geotechnical Report**	Construction: No Adverse Effect Operations: No Adverse Effect Indirect: No Adverse Effect	Yes

Table 3.16-5. Topics for Further Environmental Justice Analysis

Environmental Resource Topic	Summary of Effects	Proposed Mitigation	Effect After Mitigation	Topic Eliminated from Further EJ Analysis
	Operations – Adverse Effect • Corrosion, if not accounted for during the design process, can weaken structures built on corrosive soils, potentially causing structural failure. • Expansive soils could lead to, structural damage from uplift pressures including sidewalk and pavement cracks and track damage. Indirect – Adverse Effect • Displacements and bearing capacity failures could occur due to construction in areas susceptible to liquefaction.			
Hazardous Waste and Materials	Construction – Adverse Effect • Potential hazards could be generated by the routine transport, use, and disposal of contaminated soils and/or contaminated groundwater during construction. • Potential exposure to contaminated soil and/or groundwater or migration of contaminants (e.g., by groundwater) at 3 RECs during construction activities. • The accidental release of hazardous materials could pose a hazard to construction employees, the public, and the environment.	Construction **MY HAZ-1: Prepare a Construction Hazardous Materials Management Plan** **MY HAZ-2: Prepare Phase II ESA** **MY HAZ-3: Prepare a General Construction Soil Management Plan** **MY HAZ-4: Prepare Parcel-Specific Soil Management Plans and HASPs** **MY HAZ-5: Halt Construction Work if Potentially Hazardous**	Construction: No Adverse Effect Operations: No Adverse Effect Indirect: No Adverse Effect	Yes

Table 3.16-5. Topics for Further Environmental Justice Analysis

Environmental Resource Topic	Summary of Effects	Proposed Mitigation	Effect After Mitigation	Topic Eliminated from Further EJ Analysis
	• soils contaminated with petroleum products or chlorinated solvents could be directly encountered during excavation. • Construction activities could cause the migration of contaminants through changes in groundwater flow. Operations – No Adverse Effect Indirect – Adverse Effect • REC sites located within the Project footprint for the design options considered may result in the migration of hazardous materials into other properties while construction is occurring.	**Materials/Abandoned Oil Wells are Encountered** **MY HAZ-6: Pre-Demolition Investigation**		
Public Utilities and Energy	Construction – Adverse Effect • Construction related changes in drainage patterns, including increases in the volume and rate of runoff from the Project study area, may result in impacts to the capacity of the existing storm drain infrastructure. Operations – Adverse Effect • An increase of impervious surfaces in the Project study area could cause a decrease in infiltration and increase the volume and velocity of runoff during a storm event that could overwhelm the capacity of drainage infrastructure. Indirect – Beneficial effect	Construction **MY HWQ-1: Prepare and Implement an SWPPP** **MY HWQ-8: Final Water Quality BMP Selection (City of Vernon and BNSF ROW)**	Construction: No Adverse Effect Operations: No Adverse Effect Indirect: No Adverse Effect	Yes

Table 3.16-5. Topics for Further Environmental Justice Analysis

Environmental Resource Topic	Summary of Effects	Proposed Mitigation	Effect After Mitigation	Topic Eliminated from Further EJ Analysis
	• Reduction in GHG emissions through regional VMT reductions.			
Cultural Resources and Paleontological Resources	Construction – Adverse Effect • Ground-disturbing construction activities would occur in areas with elevated potential to contain buried archaeological sites. • Paleontologically sensitive deposits of older Quaternary alluvium may be encountered at depths as shallow as 6 feet below the natural ground. Operations – No Adverse Effect Indirect – Adverse Effect • Indirect effects to archaeological resources and paleontological resources during construction may result from looting or vandalism activities by construction personnel due to increased accessibility to buried archaeological resources.	Construction **MY CUL-1: Archeological Treatment Plan (ATP)** **MY PAL-1: Paleontological Mitigation Plan (PMP)** **MY PAL-2: Paleontological WEAP Training** **MY PAL-3: Curation** Indirect **CUL-1: Archaeological Treatment Plan (ATP)** **MY PAL-1: Paleontological Mitigation Plan (PMP)** **MY PAL-2: Paleontological WEAP Training** **MY PAL-3: Curation**	Construction: No Adverse Effect Operations: No Adverse Effect Indirect: No Adverse Effect	Yes
Economic and Fiscal Impacts	Construction: Beneficial Effects • Implementation of any combination of design options for the Malabar Yard railroad improvements would generate employment, labor income, and tax revenues. ○ Design Option 1 is expected to generate 143 temporary jobs (representing $9.4	N/A	Construction: Beneficial Effect Operations: No Adverse Effect Indirect:	Yes

Table 3.16-5. Topics for Further Environmental Justice Analysis

Environmental Resource Topic	Summary of Effects	Proposed Mitigation	Effect After Mitigation	Topic Eliminated from Further EJ Analysis
	million in labor income) during the construction period. It is expected to create $25.6 million in output (including $13.8 million in value added) and $3.3 million in total federal, state, and local tax revenues. ○ Design Option 2 is expected to generate 151 temporary jobs (representing $9.7 million in labor income) during the construction period. It is expected to create $27.1 million in output (including $14.5 million in value added) and $3.5 million in total federal, state, and local tax revenues. Operations – No Adverse Effect Indirect – No Adverse Effect		No Adverse Effect	
Safety and Security	Construction – Adverse Effect • Temporary roadway closures and detours could cause potential delays in response times for emergency vehicles. • The applicable V/C ratio threshold would be exceeded at two intersections (Intersection #5: Vernon Avenue/Santa Fe Avenue and Intersection #6: Santa Fe Avenue/Pacific Boulevard) which may affect response times, or performance objectives of emergency responders. • Roadway modifications on and adjacent to affected roadways could affect accessibility	Construction **MY TR-1: Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements** **MY TR-2: Temporary Restriping and Adding a Right-turn Overlap Phase in Westbound Direction of the Vernon Avenue/Santa Fe Avenue Intersection**	Construction: No Adverse Effect Operations: Adverse Effect Indirect: No Adverse Effect	No – Operations advanced for further analysis

Table 3.16-5. Topics for Further Environmental Justice Analysis

Environmental Resource Topic	Summary of Effects	Proposed Mitigation	Effect After Mitigation	Topic Eliminated from Further EJ Analysis
	to private driveways, parking areas, loading docks, sidewalks, and bike lanes. Operations • The applicable V/C ratio threshold would be exceeded at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard), which could affect emergency response times, or performance objectives of emergency responders during operations. • A potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may affect emergency response times or could expose pedestrians, bicyclists, or vehicles to accidents/incidents. Indirect – No Adverse Effect	**MY TR-3: Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection** Operations **MY TR-4: Re-Striping of Pacific Boulevard/Fruitland Avenue Intersection (Future Horizon Year 2040)** **MY TR-5: Add a New Vehicular Lane on Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard Roadway Segment (Future Horizon Year 2040)** **MY TR-6: Obtain Required Approvals for At-Grade Railroad Crossings**		
Socioeconomics and Communities Affected	Construction – Adverse Effect/Beneficial Effect • Temporary roadway closures and detours would be located in the same general area as Stacy Medical Center and could cause potential delays for emergency vehicles accessing this facility or require alternate routes to access this facility. • The applicable V/C ratio threshold would be exceeded at two intersections (Intersection #5: Vernon Avenue/Santa Fe Avenue and Intersection #6: Santa Fe Avenue/Pacific	Construction **MY TR-1: Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements** **MY TR-2: Temporary Restriping and Adding a Right-turn Overlap Phase in Westbound Direction of the Vernon Avenue/Santa Fe Avenue Intersection**	Construction: No Adverse Effect Operations: Adverse Effect Indirect: No Adverse Effect	No – Operations advanced for further analysis

Table 3.16-5. Topics for Further Environmental Justice Analysis

Environmental Resource Topic	Summary of Effects	Proposed Mitigation	Effect After Mitigation	Topic Eliminated from Further EJ Analysis
	Boulevard), which may also affect access to Stacy Medical Center. • Up to 143 and 151 temporary jobs are anticipated to be generated, along with $9.4 to $9.7 million is labor income, and $3.3 to $3.5 million in total federal, state, and local tax revenues generated. Operations – Adverse Effect • The applicable V/C ratio threshold would be exceeded at two intersections (Intersection #6: Santa Fe Avenue/Pacific Boulevard and Intersection #4: Pacific Boulevard/Fruitland Avenue) and one roadway segment (Roadway Segment #4: Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard), which could affect access to the Stacy Medical Center. • A potential roadway hazard may occur from vehicle queuing along Seville Avenue, which in turn may also affect access to the Stacy Medical Center. Indirect – Beneficial effect • Wages paid to workers in construction trades or supporting industries would be spent on other goods and services and provide a benefit to the economy, both locally and, to a lesser degree, regionally. • Operation of the 46th Street Connector would facilitate enhanced goods movement	**MY TR-3: Restriping of the Santa Fe Avenue/Pacific Boulevard Intersection** Operations **MY TR-4: Re-Striping of Pacific Boulevard/Fruitland Avenue Intersection (Future Horizon Year 2040)** **MY TR-5: Add a New Vehicular Lane on Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard Roadway Segment (Future Horizon Year 2040)** **MY TR-6: Obtain Required Approvals for At-Grade Railroad Crossings**		

Table 3.16-5. Topics for Further Environmental Justice Analysis

Environmental Resource Topic	Summary of Effects	Proposed Mitigation	Effect After Mitigation	Topic Eliminated from Further EJ Analysis
	and freight service to existing and potentially new customers in the City of Vernon.			

Notes:
ATP=Archaeological Treatment Plan; EJ=environmental justice; ESA=environmental site assessment; GHG=greenhouse gas; HASP=Health and Safety Plans; IGP=Industrial General Permits; MBTA=Migratory Bird Treaty Act; PMP=Paleontological Mitigation Plan; REC=recognized environmental condition; ROW=right-of-way; SWPPP=Storm Water Pollution Prevention Plan; V/C=volume-to-capacity; VMT=vehicle miles traveled

3.16.7 Topics Evaluated

The Malabar Yard railroad improvements would have a disproportionate and adverse effect on EJ populations if implementation would:

A. Result in an adverse effect that is predominantly borne by a minority population and/or a low-income population; or

B. Result in an adverse effect that will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

No Action Evaluation

If the Malabar Yard railroad improvements were not implemented, existing baseline conditions are expected to continue, and the benefits of the Malabar Yard railroad improvements would not be realized. New infrastructure would not be constructed and, therefore, would not result in physical impacts or changes to existing conditions or properties within the Malabar Yard study area. Train movements in the Malabar Yard study area are assumed to remain similar to existing conditions. No new connection along 46th Street would be made to facilitate direct access between Malabar Yard and the Los Angeles Junction. Local box and tanker train traffic would continue to use the north entrance of Malabar Yard, which is closer to an EJ community in the City of Vernon. Freight traffic would continue to share tracks with passenger rail on the San Bernardino Subdivision, which results in increased idling during freight interference, increased emissions, and increased train and truck VMT. Without the Malabar Yard railroad improvements, 8 intersections in the Malabar Yard study area are projected to operate worse than LOS D in 2024 and 10 intersections would operate at LOS E or F in 2040. Safety enhancements at at-grade rail crossings and expanded curbs and sidewalks, traffic signals, center medians, and restriping to improve pedestrian and vehicular safety would not be implemented. No displacements would occur. No new direct or indirect adverse effects would be predominantly borne by EJ communities if the Malabar Yard railroad improvements were not implemented. There would not be disproportionate and adverse effects on EJ communities under the No Action Alternative.

Malabar Yard Railroad Improvements

Analysis of Adverse Effects After Implementation of Mitigation

Direct Effects – Construction

Upon implementation of mitigation measures described in Section 3.2 through 3.15, the Malabar Yard railroad improvements would not result in adverse effects related to land use and planning, transportation, visual quality and aesthetics, air quality and global climate change, noise and vibration, biological and wetland resources, floodplains, hydrology, and water quality, geology, soils, and seismicity, hazardous waste and materials, public utilities and energy, cultural and paleontological resources, economic and fiscal impacts, safety and security, and socioeconomics

and communities affected. Based on these considerations and the location of residential communities relative to the Malabar Yard study area, the Malabar Yard railroad improvements would not result in a disproportionate or adverse effect on EJ communities.

Direct Effects – Operations

With implementation of mitigation measures identified in Table 3.16-5, operations impacts related to land use and planning; visual quality and aesthetics; air quality and global climate change; noise and vibration; biological and wetland resources; floodplains, hydrology, and water quality; geology, soils, and seismicity; hazardous waste and materials; public utilities and energy; cultural and paleontological resources; and economic and fiscal impacts would not be adverse. Therefore, there are no adverse effects on these resources related to operations that would be predominantly borne by EJ communities. There would not be disproportionate and adverse effects on EJ communities for these resource areas.

As discussed in Section 3.3, Transportation, a new railroad crossing (New Rail Crossing #5) at the intersection of Seville Avenue and 46th Street would result in queuing that could cause southbound vehicular traffic on Seville Avenue to extend north across 46th Street. Additionally, on Seville Avenue south of 46th Street, two separate sets of gate arms proposed near each other would introduce a potential roadway hazard due to northbound and southbound vehicle queuing during gate down times. The potential roadway hazard caused by queuing at these two locations is considered an adverse effect related to transportation, safety and security, and socioeconomics and communities affected during operations. Although a mitigation measure is proposed to avoid and minimize adverse effects, effects could remain adverse after implementation of mitigation.

Further consideration of these adverse effects as a result of New Rail Crossing #5 is provided below in the context of whether the effect would be predominantly borne by an EJ community or whether the Malabar Yard railroad improvements would result in a disproportionate or adverse effect on EJ communities.

Transportation

The queuing of southbound vehicular traffic along Seville Avenue could introduce a potential roadway hazard, which in turn could impede access for emergency responders, cause schedule delays to transit services, or disrupt pedestrian and bicycle circulation at the intersection. Malabar Yard Mitigation Measure TR-6, Obtain Required Approvals for At-Grade Railroad Crossings, is proposed to minimize the potential roadway hazards along Seville Avenue and requires Metro and BNSF coordinate with the City of Vernon for the new and modified at-grade railroad crossings and submit a formal application to the CPUC that follows the process outlined in the CPUC Rules of Practice and Procedure (effective May 2021). In order to obtain the required approvals, designs and crossing safety features will be required to comply with applicable design standards for safety. However, to establish the level of effectiveness, further coordination with CPUC and the City of Vernon is required, and effects could remain adverse.

Based the location of residential communities relative to the Malabar Yard study area and the intersection of Seville Avenue and 46th Street, the potential roadway hazards from vehicle queuing along Seville Avenue would primarily be experienced by the traveling public and people who work within the City of Vernon, which includes both EJ and non-EJ populations. There are 328 people who live in the City of Vernon and approximately 37,783 people who work in the City of Vernon.

- OnTheMap 2021 data indicate that approximately 81.5 percent of people who work in the City of Vernon are non-white individuals, which is less than 110 percent of the minority population in Los Angeles County (82.0 percent).
- Median household income data is not available for people who work in the Malabar Yard study area for comparison with the community of comparison; however, 57.4 percent of people who work in the City of Vernon individually area earn more than 150 percent of the federal poverty level.
- For the reasons outlined above, the people who work in the Malabar Yard study area would not be considered an EJ community.

Because the members of the traveling public and people who work in the City of Vernon (non-EJ populations) would experience the potential roadway hazards and associated effects from vehicles queuing as frequently or more frequently than the EJ communities in the City of Vernon (resident minority population), the potential adverse effects related to transportation would not be predominantly borne by an EJ community. Therefore, adverse effects on EJ communities would not be appreciably more severe or greater in magnitude than adverse effects on non-minority populations or non-low-income populations.

Safety and Security

As discussed above, vehicle queuing along Seville Avenue at 46th Street could create a roadway hazard that may in turn affect emergency response times within the City of Vernon or interfere with performance objectives of emergency responders during operations. In addition, vehicle queuing may expose pedestrian, bicyclists, or vehicles to crashes or incidents. The vehicle queuing and potential associated impacts related to emergency response times and safety for pedestrians, bicyclists, and drivers are considered adverse effects.

Malabar Yard Mitigation Measure TR-6 requires Metro and BNSF to obtain approvals by the City of Vernon for the new and modified at-grade railroad crossings and submit a Formal Application to the CPUC that follows the process outlined in the CPUC Rules of Practice and Procedure (effective May 2021). Designs and crossing safety features will be required to comply with applicable design standards for safety. However, to establish the level of effectiveness, further coordination with CPUC and the City of Vernon is required, and effects could remain adverse.

Based the location of residential communities relative to the Malabar Yard study area and the intersection of Seville Avenue and 46th Street, the potential roadway hazards from vehicle queuing along Seville Avenue would primarily be experienced by the traveling public and people

who work within the City of Vernon, which includes both EJ and non-EJ populations. Because the members of the traveling public and people who work in the City of Vernon (non-EJ populations) would experience the potential roadway hazards for pedestrians, bicyclists and drivers and potentially impacted emergency response times as frequently or more frequently than the EJ communities in the City of Vernon (resident minority population), the potential adverse effects related to safety and security would not be predominantly borne by an EJ community. Therefore, adverse effects on EJ communities would not be appreciably more severe or greater in magnitude than adverse effects on non-minority populations or non-low-income populations.

Socioeconomics and Communities Affected

The potential roadway hazard that may occur from vehicle queuing along Seville Avenue as discussed above may also affect access to the Stacy Medical Center, an occupational and industrial medicine clinic located at Pacific Avenue and Santa Fe Avenue. This is considered an adverse effect related to community facilities. Malabar Yard Mitigation Measure TR-6 requires Metro and BNSF to obtain approvals by the City of Vernon and CPUC for the new and modified at-grade railroad crossings to minimize the potential roadway hazard; however, to establish the level of effectiveness, further coordination with CPUC and the City of Vernon is required, and effects may remain adverse.

Based the location of residential communities relative to the intersection of Seville Avenue and 46th Street, as well as the nature of occupational medical services provided at the Stacy Medical Center, the potential roadway hazards that could affect access to the clinic would primarily be experienced by the traveling public and people who work within the City of Vernon, which includes both EJ and non-EJ populations. In addition, there are two other urgent care and occupational medicine clinics located within a mile of the Malabar Yard study area that would be accessible from Soto Street, east of Seville Avenue or from East Vernon Avenue west to Alameda Street. Because the members of the traveling public and people who work in the City of Vernon (non-EJ populations) would experience the potential access issues to Stacy Medical clinic as frequently or more frequently than the EJ communities in the City of Vernon (resident minority population), the potential adverse effects related to community facilities would not be predominantly borne by an EJ community. Therefore, adverse effects on EJ communities would not be appreciably more severe or greater in magnitude than adverse effects on non-minority populations or non-low income populations.

Assessment of Beneficial Effects

Construction of any combination of design options for the Malabar Yard railroad improvements would result in the following beneficial effects that would be realized by EJ communities:

- The Malabar Yard railroad improvements would contribute to regional air quality benefits by allowing for the separation of freight and passenger trains operating on the San Bernardino line. With less interference between freight and passenger trains, operational efficiencies would result in less idling and a reduction in train miles and truck VMT.

While there are no residential communities within the Malabar Yard study area:

- There would be a reduction in emissions by shifting some freight rail activity away from the EJ community west of Malabar Yard and facilitating fewer train movements along the Harbor Subdivision north of Malabar Yard.
- Upon approval from the City of Vernon and CPUC, the Malabar Yard railroad improvements would result in safety enhancements, including arms, flashers, raised medians, and driveway gates at at-grade rail crossings, as well as the closure of one at-grade rail crossing. The safety improvements would benefit minority communities that live and travel through the City of Vernon.
- Upon approval from the City of Vernon and CPUC, 46th Avenue would have expanded curbs, sidewalks, traffic signals, center medians, and restriping to improve pedestrian and vehicular mobility and safety. The safety improvements would benefit minority populations that live and travel through the City of Vernon.
- During construction, up to 143 and 151 temporary jobs are anticipated to be generated, along with $9.4 to $9.7 million in labor income, and $3.3 to $3.5 million in total federal, state, and local tax revenues generated.

3.16.8 Mitigation Measures

Under NEPA, federal agencies must identify potentially adverse effects and identify measures to avoid, minimize, or mitigate those effects. Mitigation measures are developed for adverse effects that cannot be avoided or minimized through modification of the design. As identified in Table 3.16-5, mitigation measures related to land use, transportation, air quality and global climate change, biological and wetland resources, water quality, geology, hazardous materials, public utilities, cultural resources and paleontological resources, safety and security, and socioeconomic and communities are proposed to avoid and minimize potential impacts. With implementation of mitigation measures described in Sections 3.2 through 3.15 and listed below, adverse effects would remain for three resource topics; however, the remaining adverse effects would not result in disproportionate and adverse effects on EJ communities. No further mitigation is necessary.

- Implementation of the following mitigation measures would reduce adverse effects associated with land use compatibility:
  - Mitigation Measure MY TR-1: Prepare a Construction Traffic Management Plan (TMP).
- Implementation of the following mitigation measures would reduce adverse effects associated with the transportation network:
  - Mitigation Measure MY TR-1: Prepare a Construction Traffic Management Plan (TMP).

  - MY TR-2: Temporary Re-Striping and Adding a Right-turn Overlap Phase in Westbound Direction of Vernon Avenue/Santa Fe Avenue Intersection
  - MY TR-3: Re-Striping of Santa Fe Avenue/Pacific Boulevard Intersection
  - MY TR-4: Re-Striping of Pacific Boulevard/Fruitland Avenue Intersection (Future Horizon Year 2040)
  - MY TR-5: Add a New Vehicular Lane on Fruitland Avenue between Santa Fe Avenue and Pacific Boulevard Roadway Segment (Future Horizon Year 2040)
  - MY TR-6: Obtain Required Approvals for At-Grade Railroad Crossings
- Implementation of the following mitigation measure would reduce adverse effects on air quality:
  - MY AQ 1: Fugitive Dust Control
  - MY AQ 2: Compliance with U.S. EPA's Tier 4 Exhaust Emission Standards and Renewable Diesel Fuel for Off Road Equipment
- Implementation of the following mitigation measure would reduce adverse effects related to biological resources:
  - MY BIO-1: MBTA Species
  - MY BIO-2: Protected Trees
- Implementation of the following mitigation measure would reduce adverse effects related to water quality:
  - MY HWQ-1: Prepare and Implement a SWPPP
  - MY HWQ-2: Comply with Local Dewatering Requirements
  - MY HWQ-3: Comply with Local Dewatering Requirements for Contaminated Sites
  - MY HWQ-4: Prepare and Implement Industrial SWPPP for Relocated, Regulated Industrial Uses
  - MY HAZ-1: Prepare a Construction Hazardous Materials Management Plan
  - MY HWQ-5: Final Water Quality BMP Selection (City of Vernon and Railroad ROW)
- Implementation of the following mitigation measure would reduce adverse effects related to soils and seismicity:
  - MY GEO-1: Prepare Final Geotechnical Report.
- Implementation of the following mitigation measure would reduce adverse effects associated with hazardous materials:
  - MY HAZ 1: Prepare a Construction Hazardous Materials Management Plan
  - MY HAZ 2: Prepare Phase II ESA

- MY HAZ 3: Prepare a General Construction Soil Management Plan
- MY HAZ 4: Prepare Parcel Specific Soil Management Plans and HASPs
- MY HAZ 5: Halt Construction Work if Potentially Hazardous Materials/Abandoned Oil Wells are Encountered
- MY HAZ 6: Pre Demolition Investigation

- Implementation of the following mitigation measures would mitigate potential adverse effects on subsurface archaeological and paleontological resources:
  - MY CUL 1: Archeological Treatment Plan (ATP)
  - MY PAL-1: Paleontological Mitigation Plan (PMP)
  - MY PAL-2: Paleontological WEAP Training
  - MY PAL-3: Curation
- Implementation of the following mitigation measures would mitigate potential adverse effects associated with safety and security:
  - MY TR-1: Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements
  - MY TR-6: Obtain Required Approvals for At-Grade Railroad Crossings
- Implementation of the following mitigation measures would mitigate potential adverse effects on socioeconomics and community resources:
  - MY TR-1: Prepare a Construction Traffic Management Plan for Malabar Yard Railroad Improvements

3.16.9 Draft Project-Wide Environmental Justice Determination

As previously indicated, the determination of whether the effects of the Malabar Yard railroad improvements are disproportionate and adverse depends on whether 1) the effects of the Malabar Yard railroad improvements would be borne predominantly by a minority or low-income population; or 2) the effects of the Malabar Yard railroad improvements would be appreciably more severe or greater in magnitude on minority or low-income populations than the effects on nonminority or non-low-income populations.

The determination considers the totality of the locations of adverse effects relative to minority populations, the severity of the adverse effect and the success of proposed mitigation in reducing the effect, whether mitigation measures reduce effects equally for both minority populations and non-minority populations, and the benefits that minority populations would receive.

The EJ study area (City of Vernon) consists predominantly of minority populations (94 percent). There is not a low-income population that is meaningfully greater than the community of comparison. The Malabar Yard study area encompasses the area where the railroad improvements would be constructed. Without mitigation, implementation of any combination of

design options for the Malabar Yard railroad improvements would result in adverse effects that may affect EJ communities living adjacent to the Malabar Yard construction limits. However, because the EJ communities are located and concentrated outside of the construction limits, the burden would be limited to the people who work in the City of Vernon and populations traveling through the Malabar Yard study area, both of which are non-EJ populations.

As described in Section 3.16.6, any combination of design options for the Malabar Yard railroad improvements would result in adverse effects related on the following topics:

- Land use and planning;
- Transportation;
- Floodplains, hydrology, and water quality;
- Biological and wetland resources;
- Hazards and hazardous materials;
- Cultural and paleontological resources;
- Geology, soils, and seismicity;
- Public utilities and energy;
- Safety and security; and
- Socioeconomics and communities affected.

Mitigation measures, BMPs, and compliance with federal, state, and local requirements would minimize these adverse effects. No adverse effects on EJ communities within the EJ study area would occur. Effects related to transportation, safety and security, and socioeconomics and communities affected could remain adverse under NEPA even after implementation of the applicable mitigation measures; however, EJ communities are not located within the Malabar Yard study area where the Malabar Yard railroad improvements would be implemented. Based on the location of residential communities relative to the Malabar Yard study area, potential roadway hazards from vehicle queuing along Seville Avenue and the associated transportation, safety and security, and impacts on community facilities would primarily be experienced by the traveling public and people who work in the City of Vernon, which includes both EJ and non-EJ populations. The potential adverse effects related to transportation, safety, and community facilities would not be predominantly borne by an EJ community, nor would they be appreciably more severe or greater in magnitude than adverse effects on non-minority populations or non-low income populations.

The local EJ communities living and traveling within the Malabar Yard study area would predominantly benefit from the improvements, including a reduction in emissions by shifting some freight rail activity away from an EJ community; safety enhancements at at-grade crossings and closure of one at-grade crossing to facilitate safe crossing; and expanded curbs, new sidewalks, traffic signals, center medians, and restriping to improve mobility and pedestrian and vehicular

safety. Because the EJ study area consists predominantly of resident minority populations, the benefits would be equal to or greater than the benefits experienced by the general public.

Based on these considerations, any combination of design options for the Malabar Yard railroad improvements would not result in disproportionate and adverse effects on EJ communities.

CHSRA's EJ determination in this Draft EIS/SEIR is preliminary and is subject to change based on comments received during the public comment period on this document. In accordance with USDOT Order 5610.2C, if disproportionate and adverse effects are identified, the action will only be carried out if CHSRA determines that "further mitigation measures or alternatives that would avoid or reduce the disproportionate and adverse effect are not practicable." In the Final EIS/SEIR, CHSRA will make its final determination concerning whether the Malabar Yard railroad improvements will or will not have a disproportionate and adverse effect on minority populations and low-income populations considering the Project effects on these populations, measures to minimize harm, and Project benefits. CHSRA will take into account the input of minority populations and low-income populations during the ongoing engagement, including regarding measures to minimize harm as well as comments from minority populations and low-income populations on the Draft EIS/SEIR.

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3.17 Section 4(f) Evaluation

This section provides the analysis to support CHSRA's preliminary determinations to comply with the provisions of 49 USC Section 303 (hereinafter referred to as Section 4(f)) and the LWCF Act of 1965 (hereinafter referred to as Section 6(f)).

As it relates to Section 4(f), information about historic properties within the Malabar Yard Section 4(f) study area, which encompasses 1,000-foot buffer around the Project footprint for the Malabar Yard railroad improvements contained in this section is summarized from the *Link US Finding of Effect Report* (Appendix M of the Link US EIS/SEIR).

Upon implementation of the Malabar Yard railroad improvements, the preliminary Section 4(f) determinations are as follows:

- No permanent use would occur;
- No temporary occupancies would occur;
- No constructive use would occur; and,
- There are no Section 6(f) properties in the Project study area.

The No Action Alternative would not require the Malabar Yard railroad improvements as mitigation and, therefore, would have no effect on any Section 4(f) or 6(f) resources.

3.17.1 Introduction

This section provides an evaluation of potential use of Section 4(f) properties that may result upon implementation of the Malabar yard railroad improvements and the No Action Alternative. For the purposes of this EIS/SEIR, CHSRA is the federal lead agency with NEPA responsibilities for the Project, pursuant to the requirements of the NEPA Assignment MOU. Therefore, acting as the federal lead agency, CHSRA would be responsible for issuing the Record of Decision and coordinating any related environmental reviews, in partnership with Metro, including any coordination activities in compliance with Section 4(f) requirements.

To demonstrate CHSRA's compliance with Section 4(f), this chapter:

- Describes the statutory requirements associated with Section 4(f)
- Identifies the properties protected by Section 4(f) in the study area;
- Provides a preliminary determination whether the Malabar Yard railroad improvements would result in the Section 4(f) use of those properties; and
- Where applicable,
    - Identifies feasible and prudent alternatives, to the extent any exist, that would avoid or minimize use of the properties;

- Identifies measures to minimize harm; or
- Provides a preliminary least-harm analysis for build alternatives that would result in the use of Section 4(f) properties.

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being or have been carried out by the State of California pursuant to 23 USC § 327 and a MOU dated July 23, 2019, and executed by the FRA and the State of California. This draft Section 4(f) evaluation is being released for comment by CHSRA pursuant to 23 USC 327 and the terms of the NEPA Assignment MOU (FRA and State of California 2019) assigning the CHSRA responsibility for compliance with NEPA and other federal environmental laws, including Section 4(f) (49 USC 303) and related USDOT orders and guidance.[1]

3.17.2 Regulatory Framework

Section 4(f) of the Department of Transportation Act of 1966

Section 4(f) of the USDOT Act of 1966, codified in federal law at 49 USC 303, declares that "it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites." Implementing regulations followed by FRA for Section 4(f) can be found at 23 CFR 774.

CHSRA may not approve the use of a Section 4(f) property, a transportation program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic property of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site), unless:

- It determines the project has a *de minimis* impact consistent with the requirements of 49 USC Section 303(d), or
- It determines that:
  - There is no feasible and prudent avoidance alternative, as defined in 23 CFR 774.17, to the use of the property; and
  - The action includes all possible planning, as defined in 23 CFR 774.17, to minimize harm to the property resulting from such use.

[1] CHSRA cannot make any determination that an action constitutes a constructive use of a publicly owned park, public recreation area, wildlife refuge, waterfowl refuge, or historic site under Section 4(f) without first consulting with FRA and obtaining FRA's views on such determination. CHSRA will provide FRA written notice of any proposed constructive use determination, and FRA will have 30 calendar days to review and provide comment. If FRA objects to the constructive use determination, CHSRA will not proceed with the determination.

An alternative is not feasible if it cannot be built as a matter of sound engineering judgment. In determining whether an alternative is prudent, CHSRA may consider if the alternative will result in any of the following:

- The alternative does not meet the Project's stated purpose and need;
- The alternative would entail unacceptable safety or operational problems;
- After reasonable mitigation, the alternative would result in severe social, economic, or environmental impacts; severe disruption to established communities; severe disproportionate impacts on minority or low-income populations; or severe impacts on environmental resources protected under other federal statutes;
- The alternative would require additional construction, maintenance, or operational costs of an extraordinary magnitude;
- The alternative would pose other unique problems or unusual factors; or
- The project would entail multiple factors that, while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

If CHSRA determines there is both the use of a Section 4(f) property and that there is no prudent and feasible alternative to the use of a Section 4(f) resource, CHSRA must ensure the project includes all possible planning (including coordination with and concurrence of the officials with jurisdiction [OWJ] over the property) to minimize harm to the property, which includes all reasonable measures to minimize harm or mitigate impacts (49 USC 303(c)(2)). OWJ are defined in 23 CFR 774.17.

After making a Section 4(f) determination and identifying the reasonable measures to minimize harm, if there is more than one alternative that results in the use of a Section 4(f) property, CHSRA must also compare the alternatives to determine which alternative has the potential to cause the least overall harm in light of the preservationist purpose of the statute. The least overall harm may be determined by balancing the following factors:

- The ability to mitigate adverse impacts on each Section 4(f) property (including any measures that result in benefits to the property);
- The relative severity of the remaining harm (after mitigation) to the protected activities, attributes, or features that qualify each Section 4(f) property for protection;
- The relative significance of each Section 4(f) property;
- The views of the OWJ over each Section 4(f) property;
- The degree to which each alternative meets the project Purpose and Need;
- After reasonable mitigation, the magnitude of any adverse impacts on resources not protected by Section 4(f); or
- Substantial differences in costs among the Project alternatives.

Section 4(f) Applicability

Properties qualify for protection under Section 4(f) as follows:

- Parks and recreational areas of national, state, or local significance that are publicly owned at the time of the use; open to the public; designated as a park or recreational area by a federal, state, or local agency; the property's primary purpose is as a park or recreational area; and it is considered significant by the OWJ over the property. Publicly owned land that is designated for a future planned public park or recreation area also qualifies for protection under Section 4(f).
- A wildlife or waterfowl refuge that is publicly owned at the time the use occurs; has been officially designated as a wildlife and/or waterfowl refuge area by a federal, state, or local agency; its primary purpose is consistent with the property's primary function and how it is intended to be managed and is considered significant by the OWJ over the property. A refuge is not necessarily required to be open to be protected as a Section 4(f) resource.
- A historic site eligible, or listed in, the NRHP may be protected under Section 4(f). For a property to be eligible for the NRHP, it must meet at least one of the four NRHP criteria (i.e., Criteria A–D) described below and the quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association. If the archeological resource is determined to be important chiefly because of what can be learned by data recovery and has minimal value for preservation in place, and the SHPO agrees, it will be covered under the exception at 23 CFR 774.13(b) and will not require Section 4(f) approval.

Although the statutory requirements of Section 106 and Section 4(f) are similar, Section 106 assesses the Project's effects on a historic property while Section 4(f) assesses if there is a use or occupancy of the historic property. Therefore, if a project results in an adverse effect on a historic property under Section 106, this does not automatically mean that there is a Section 4(f) use of that historic property.

Section 4(f) Use Definition

Under Section 4(f), there are three main types of uses:

- **Permanent Use** – The property is permanently incorporated into a proposed transportation facility. This might occur as a result of a partial or full fee acquisition, permanent easement, or temporary easement that exceeds established regulatory limits for temporary occupancy as defined below.
- **Temporary Occupancy** – A temporary occupancy of a Section 4(f) resource occurs when the resource, in whole or in part, is required for construction-related activities. A temporary occupancy would be considered a use if the property is not permanently incorporated into a transportation facility, but the activity is considered an impact in terms of the preservationist purposes of the Section 4(f) statute. A temporary occupancy of property

does not constitute a use of a Section 4(f) resource where the conditions in 23 CFR 774.13(d) are satisfied:

- Duration must be temporary (i.e., less than the time needed for construction of the project), and there should be no change in ownership of the land;
- Scope of the work must be minor (i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal);
- There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis;
- The land being used must be fully restored (i.e., the property must be returned to a condition which is at least as good as that which existed prior to the project); and
- There must be documented agreement of the OWJ over the Section 4(f) resource regarding the above conditions.

- **Constructive Use** – A constructive use of a Section 4(f) resource occurs when a transportation project does not permanently incorporate the property of a protected resource, but the proximity impacts of a project adjacent to, or nearby, a Section 4(f) property result in substantial impairment to the property's activities, features, or attributes that qualify the property for protection under Section 4(f). Therefore, the value of the resource, in terms of its Section 4(f) purpose and significance, will be meaningfully reduced or lost. However, a project's proximity to a Section 4(f) property is not in itself an impact that results in constructive use.

Pursuant to 23 USC 327 and under the NEPA Assignment MOU between the FRA and the State of California, CHSRA can make the determination that there is no constructive use. CHSRA cannot make any determination that an action constitutes a constructive use of a publicly owned park, public recreation area, wildlife refuge, waterfowl refuge, or historic site under Section 4(f) without first consulting with FRA and obtaining FRA's views on such determination. CHSRA will provide FRA written notice of any proposed constructive use determination, and FRA will have 30 calendar days to review and provide comment. If FRA objects to the constructive use determination, CHSRA will not proceed with the determination.

- **De minimis Impact** - A *de minimis* impact determination involves the use of a Section 4(f) property that is generally minor in nature. According to 49 USC 303(d), the following criteria must be met to reach a *de minimis* impact determination:
  - For parks, recreation areas, wildlife, and waterfowl refuges, a *de minimis* impact determination may be made if CHSRA concludes the transportation project will not adversely affect the activities, features, and attributes qualifying the property for protection under Section 4(f) after mitigation. In addition, to make a *de minimis* impact determination:

- The OWJ over the property must be informed regarding the intent to make a *de minimis* impact determination, after which, public notice and opportunity for public review and comment must be provided.
- After consideration of comments, if the OWJ over the property concur in writing that the project will not adversely affect the activities, features, or attributes that make the property eligible for Section 4(f) protection, then CHSRA may finalize the finding of a *de minimis* impact.

o For an historic site, a *de minimis* impact determination may be made if, in accordance with the Section 106 process of the NHPA, CHSRA determines that the transportation program or project will have no effect or no adverse effect on the historic property, CHSRA has received written concurrence from the OWJ over the property (e.g., SHPO), and has taken into account the views of consulting parties to the Section 106 process as required by 36 CFR Part 800.

Coordination

As a part of the EIS/SEIR process, this preliminary Section 4(f) evaluation is being made available for a 45-day duration during the Draft EIS/SEIR public comment period. Copies of the Draft EIS/SEIR have been provided to the U.S. Department of Interior National Park Service and OWJ over the Section 4(f) resources and any changes would be reflected in the final Section 4(f) analysis. The Final Section 4(f) evaluation will be part of the Final EIS/SEIR and provided to the U.S. Department of Interior and OWJ over the Section 4(f) resources. CHSRA will continue to consult with these agencies to seek their written concurrence on Section 4(f) determinations after publication of the Draft EIS/SEIR. After completing the final Section 4(f) analysis, the CHSRA's Section 4(f) determination would be part of its Record of Decision.

Section 106 of the National Historic Preservation Act of 1966

As described in Section 3.12, Cultural and Paleontological Resources, Section 106 requires federal agencies to take into account the effects of their undertakings on historic properties and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment (36 CFR 800.1). A historic property is defined in the NHPA as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on, the NRHP, including artifacts, records, and material remains related to such a property or resource" (54 USC 300308).

For a property to be eligible for the NRHP, it must possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet one or more of the following NRHP criteria:

- **Criterion A** – Properties that are associated with events that have made a significant contribution to the broad patterns of our history.
- **Criterion B** – Properties that are associated with the lives of persons significant in our past.

- **Criterion C** – Properties that embody distinctive characteristics of a type, period, or method of construction; or that represent the work of a master; or that possess high artistic values; or that represent a significant and distinguishable entity whose components may lack individual distinction.
- **Criterion D** – Properties that have yielded, or may be likely to yield, information important to prehistory or history.

The Section 106 process is the method by which a historic property's significance is determined through consultation with SHPO and other Section 106 consulting parties. Section 106 requires consideration of a project's effects on historic properties, while Section 4(f) considers whether there is a use or occupancy of historic properties.

3.17.3 Description of Malabar Yard Railroad Improvements

A detailed description of the proposed Malabar Yard railroad improvements is provided in Chapter 2.0, Description of Malabar Yard Railroad Improvements. As discussed in Chapter 2, Malabar Yard railroad improvements in the City of Vernon are proposed as mitigation to offset the loss of storage track capacity at the BNSF West Bank Yard. The following improvements and the design options considered for each location are summarized below:

1. **49th Street Closure -** Closure of the at-grade railroad crossing at 49th Street would accommodate approximately 3,350 track feet of storage capacity at the BNSF Malabar Yard.
    - **Design Option 1 (Offset Cul-de-Sac):** Typical cul-de-sac configuration with a rounded curve edge, with the offset being the portion of the roadway that encroaches into private property south of the existing roadway.
    - **Design Option 2 (Hammerhead Cul-de-Sac):** Non-typical cul-de-sac configuration in the shape of a "T", with areas on each side of the existing roadway for large trucks to maneuver in and out of adjacent private properties.
2. **46th Street Connector –** An approximately 1,000-foot segment of new track would provide a dedicated connection for freight trains serving local customers to travel between BNSF's Malabar Yard and BNSF's Los Angeles Junction.
    - **Design Option 1 (Southern Alignment):** New track alignment that encroaches into multiple private properties on the south side of 46th Street to avoid narrowing and/or reconfiguration of the existing roadway between Pacific Boulevard and Seville Avenue.
    - **Design Option 2 (Northern Alignment):** New track alignment that avoids the majority of private properties on the south side of 46th Street and includes narrowing and/or reconfiguration of the existing roadway between Pacific Boulevard and Seville Avenue.

3.17.4 Coordination with Officials with Jurisdiction

Before this Section 4(f) Evaluation can be approved, coordination with OWJs over the resources must be documented when applying the exception for archeological sites of minimal value for preservation in place under paragraph 774.13(b); and when applying the exception for temporary occupancies under paragraph 774.13(d).

For the purposes of Section 4(f), the SHPO is the OWJ because the Malabar Yard railroad improvements would only result in the use of historic sites that qualify under Section 4(f) (see Section 3.17.5). Therefore, the historic preservation review process mandated by Section 106 of the NHPA covers the Section 4(f) coordination process, and the SHPO serves as the OWJ.

For the Malabar Yard railroad improvements, the *Link US Supplemental Cultural Resources Report* (Appendix M of the Link US EIS/SEIR) was prepared to update the portion of Area of Potential Effects (APE) in the City of Vernon and to identify and evaluate historic properties within the portion of the APE in the City of Vernon. On February 10, 2021, SHPO concurred with the updated APE and the historic property determinations of eligibility. SHPO concurred with the *Link US Finding of Effect Report* (Appendix M of the Link US EIS/SEIR) on November 20, 2023. The ACHP has declined to participate in the consultation pursuant to 36 CFR § 800.6(a)(1)(iii).

As documented in the *Link US Supplemental Cultural Resources Report* (Appendix M of the Link US EIS/SEIR), in February of 2020 consulting parties were provided with information on the location of the Malabar Yard railroad improvements and related cultural resource identification efforts, including an assessment of the archaeological sensitivity where Malabar Yard railroad improvements would occur within the City of Vernon.

CHSRA has met with consulting parties (specifically City of Vernon and the Gabrieleño Band of Mission Indians – Kizh Nation) to discuss the scope of the Malabar Yard railroad improvements and to request information concerning the identification and evaluation of historic properties in the APE. Meetings where consulting parties commented specifically about cultural resources in the vicinity of the Malabar Yard railroad improvements are in Table 3.17-1.

Table 3.17-1. Section 106 Consultation related to the Identification of Historic Properties in the Area of Potential Effects for Railroad Improvements

Consulting Party	Meeting Outcome
Gabrieleño Band of Mission Indians – Kizh Nation	The Gabrieleño Band of Mission Indians – Kizh Nation was provided with information on the location of Project components and cultural resource identification efforts to date, including an assessment of the archaeological sensitivity of the Project footprint. The Gabrieleño Band of Mission Indians – Kizh Nation agreed with the results of the cultural resource identification efforts and sensitivity assessment and provided contextual information about Native American settlements in the vicinity of the City of Vernon.

Table 3.17-1. Section 106 Consultation related to the Identification of Historic Properties in the Area of Potential Effects for Railroad Improvements

Consulting Party	Meeting Outcome
City of Vernon	The City of Vernon expressed interest in being a consulting party at a meeting on April 22, 2020. A request for further information about historic properties within the APE was sent to the City of Vernon via email on July 22, 2020. On July 22, 2020, the City of Vernon stated in an email that it had no input on the identification of historic properties within the City of Vernon.

Notes:
APE=area of potential effects; API=area of physical impacts

The historic preservation review process mandated by Section 106 of the NHPA serves as the Section 4(f) property correspondence for the single historic site included in this evaluation, the Solar Manufacturing Corporation Building.

3.17.5 Determine Section 4(f) Applicability Analysis

To document Section 4(f) properties for the Malabar Yard railroad improvements, historic properties within the APE were inventoried within the Section 4(f) study area, which includes a 1,000-foot buffer around the Project footprint for the Malabar Yard railroad improvements (Figure 3.17-1). Per the City of Vernon General Plan, given the industrial character of the city, the city does not contain public parks or recreational facilities. Additionally, considering the industrial character of the region shown in Figure 3.17-1, no public wildlife and waterfowl refuges of national, state, or local significance are located within the Section 4(f) study area. Additionally, consultation with Native American Tribes has not identified any properties of traditional religious and cultural importance that may be determined to be eligible for inclusion in the NRHP. Therefore, only a single historic site, discussed below, is included in this evaluation, the Solar Manufacturing Corporation Building (Figure 3.17-1).

Historic Sites of National, State, or Local Significance, Whether Publicly or Privately Owned

The Solar Manufacturing Corporation Building is described below:

- ***Solar Manufacturing Corporation Building*** (4553 Seville Avenue, Vernon; see historic property noted on Figure 3.17-1) is a single-story Late Moderne industrial property. The building is recorded as a significant example of its style and type that also retains excellent integrity (Roderick 2017). Character-defining features include a low-slung, single-story horizontality, box-like plan of the works component with rhythmically spaced metal frame window bays and sawtooth roof, and an articulated office and reception component (Figure 3.17-2). The character-defining features of the Late Moderne style office and reception component include weighty, asymmetrical massing and an angular composition of solid rectilinear forms placed in balanced contrast; multi-material cladding, such as

smooth stucco and Roman brick; bezeled metal frame ribbon windows; original metal awnings; an emphasized entrance; and low, architecturally integrated Roman brick planters (Figure 3.17-2). The property was determined eligible for listing in the NRHP at the local level, under Criterion C, as a significant and highly intact example of a light industrial property designed in the Late Moderne style. SHPO concurred with this determination in a letter dated May 17, 2019. The property served as the Solar Manufacturing Corporation's office and warehouse from its construction in 1954 until circa 1973, and its period of significance is 1954, its year of construction. The property's NRHP-eligible historic boundary is the parcel boundary, which includes the building and its adjacent landscape features, such as Roman brick planters, trucking dock, railroad siding dock, and original surface parking areas. There has been no change in the integrity, significance, or architectural narrative since the resource was previously surveyed less than 5 years ago in 2017. Therefore, the previous eligibility determination remains unchanged.

Figure 3.17-1. Section 4(f) Study Area and Section 4(f) Properties

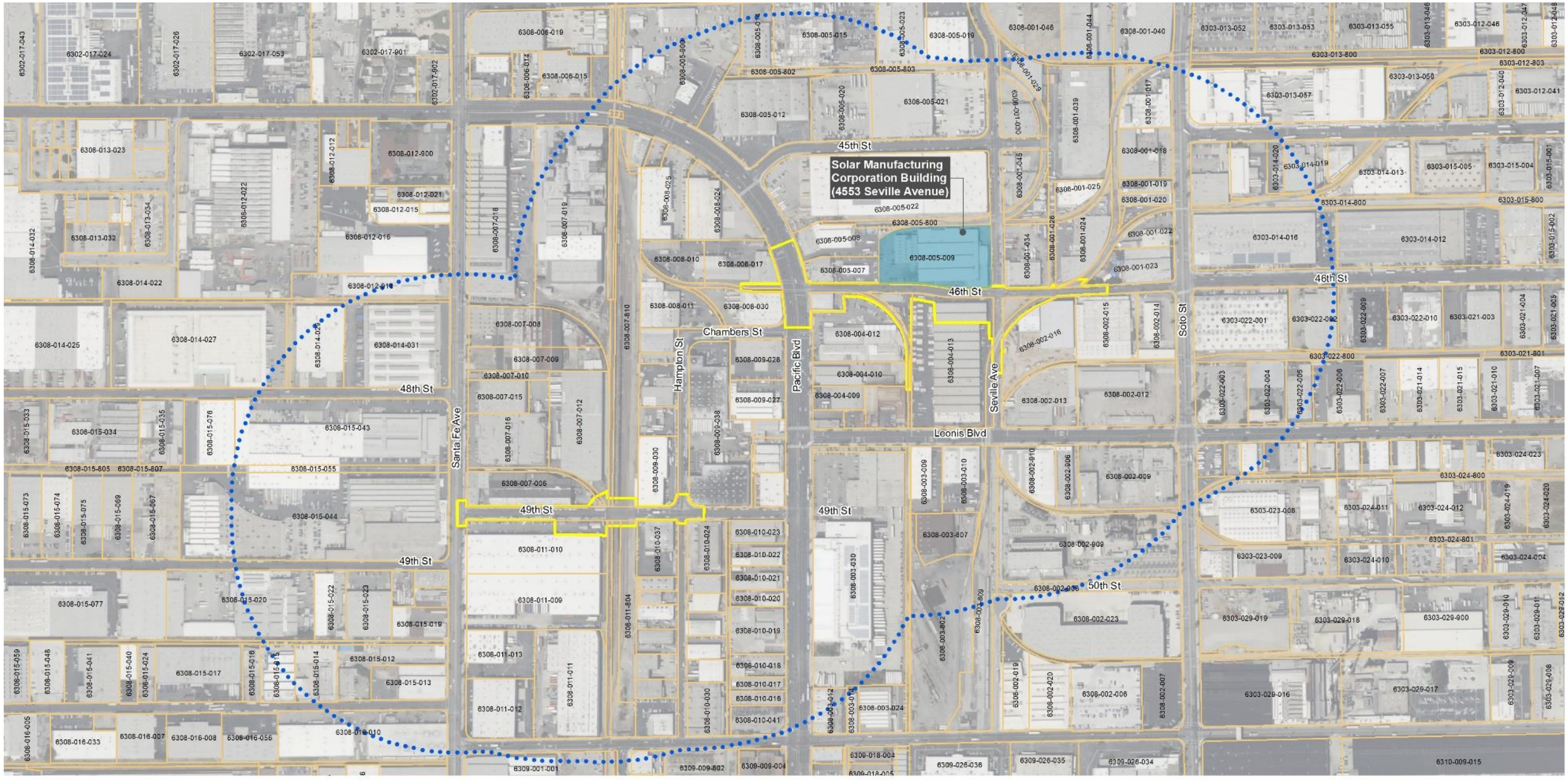

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Figure 3.17-2. Solar Manufacturing Corporation Building (4553 Seville Avenue, Vernon), Looking Northwest

3.17.6 Assess Impacts and Determine Section 4(f) Use

The preliminary Section 4(f) determination for the Malabar Yard railroad improvements is that no Section 4(f) use would occur for the NRHP-eligible Solar Manufacturing Corporation Building in Vernon, California.

Section 4(f) determinations will be finalized in the Final EIS/SEIR.

No Section 4(f) Use

The Malabar Yard railroad improvements would not encroach upon the boundaries of this historic property, nor would they require any construction activities that would cause physical destruction of, damage to, or alteration of this historic property. Construction activities in the vicinity of the Solar Manufacturing Corporation Building include installation of new freight track along 46th Street within a new railroad ROW. The construction would take place over 75 feet to the south of the building, across from the existing 46th Street ROW and the building and parcel that comprise the historic property would not be physically disturbed or altered. The improvements, therefore, would not result in proximity impacts that would cause a constructive use. Access to and from the property would not be impeded during or after construction, and a TMP, per Malabar Yard

Mitigation Measure TR-1 would be implemented as part of construction to minimize impacts on traffic circulation on nearby roadways.

The Malabar Yard railroad improvements would not change the character of the use or physical setting of the historic property in a manner that would diminish its integrity, nor would the Malabar Yard railroad improvements affect the current use of the historic property as an industrial building. The resource is located in an urban area surrounded by industrial buildings and is already in proximity to railroad tracks. Given the distance of the improvements from the front of the building, dust, noise, visual, or access impacts would not adversely affect the historic property.

Trucks, bulldozers, excavators, and other construction equipment would be used for work in the area, but there would be no high-intensity activities, including pile driving, at this location. Although construction would take place in the general vicinity of the historic property, there is not a potential for vibration damage during construction due to the intervening distance, the building type (reinforced concrete), and the nature of the proposed activities.

No direct or indirect impacts that could result in a permanent incorporation, temporary occupancy, or constructive use of this property have been identified and the improvements does not hinder the preservation of the property. Therefore, no use of this resource would be required to implement the Malabar Yard railroad improvements, and no further analysis is required. On November 20, 2023, the SHPO concurred with the findings and conclusions outlined in the *Link US Finding of Effect Report* (Appendix M of the Link US EIS/SEIR).

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Appendix A. Engineering Plans (Design Option 1 for 49th Street Closure and 46th Street Connector)

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BNSF RAILWAY

HARBOR AND SAN BERNARDINO SUBDIVISION
LINE SEGMENT 7604/7665

MALABAR YARD / 49TH STREET CLOSURE AND LAJ CONNECTOR BETWEEN TRACKS 7604-2750 AND 7665-1010 (REFERENCE LOCATION: MP1.3, HARBOR SUB)

Preliminary - Subject to Change

PROJECT LOCATION
NOT TO SCALE

LOS ANGELES, CA

PROJECT AREA
NOT TO SCALE

10% DESIGN SUBMITTAL
JUNE 30, 2020

NOT FOR CONSTRUCTION

SERIES GN01 OF GN04

$USER$
$TIME$
PLOT DATE: $DATE$

HDR Engineering, Inc.
2280 Market Street, Suite 100
Riverside, CA 92501-2110
951-320-7300
www.hdrinc.com

ISSUE	DATE	DESCRIPTION
1	06/30/20	10% CONCEPTUAL PLANS

BNSF CALL BEFORE YOU DIG # 1-800-422-4133

Underground Service Alert
Call 811
Before You Dig
TWO WORKING DAYS BEFORE YOU DIG

BNSF RAILWAY
HARBOR AND SAN BERNARDINO SUBDIVISION

DESIGNED:	HDR-BR
CHECKED:	HDR-EC
DRAWN:	HDR-WS
CHECKED:	HDR-JR
DATE:	JUNE 30, 2020
AUTH:	
LINE SEG:	7604/7665

BNSF RAILWAY - HARBOR AND SAN BERNARDINO
SUBDIVISION - BETWEEN TRACKS 7604-2750 AND 7665-1010

COVER SHEET

FILENAME	16542-MALA-G-GN01.dgn
SCALE	(FULL-SIZE) - AS NOTED

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Preliminary - Subject to Change

PLOT DATE: 6/30/2020 4:51:56 PM WSTEBOK

NOT FOR CONSTRUCTION

SERIES GN02 OF GN04

HDR Engineering, Inc.
2280 Market Street, Suite 100
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ISSUE	DATE	DESCRIPTION
1	06/30/20	10% CONCEPTUAL PLANS

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Underground Service Alert
Call 811
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TWO WORKING DAYS BEFORE YOU DIG

BNSF RAILWAY

HARBOR AND SAN BERNARDINO SUBDIVISION

DESIGNED:	HDR-BR
CHECKED:	HDR-EC
DRAWN:	HDR-WS
CHECKED:	HDR-JR
DATE:	JUNE 30, 2020
AUTH:	
LINE SEG:	7604/7665

BNSF RAILWAY - HARBOR AND SAN BERNARDINO SUBDIVISION - BETWEEN TRACKS 7604-2750 AND 7665-1010

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FILENAME	16542-MALA-G-GN02.dgn
SCALE	(FULL-SIZE) - AS NOTED

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GENERAL NOTES

1. CONTRACTOR SHALL COMPLY WITH ALL THE LOCAL, STATE AND FEDERAL SAFETY CODES AND REGULATIONS AND THE SPECIFICATIONS FOR THIS CONTRACT.
2. ALL CONSTRUCTION ACTIVITIES SHALL BE SCHEDULED AND COORDINATED THROUGH THE ENGINEER, INCLUDING THE VARIOUS COMPANIES, AGENCIES AND OTHER CONTRACTORS WHO MAY BE AFFECTED BY THIS WORK. ALL REQUIRED PERMITS NEEDED FOR THE WORK SHALL BE OBTAINED BY THE CONTRACTOR UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL COMPLY WITH ALL RAILROAD OCCUPANCY REQUIREMENTS INCLUDING INSURANCE REQUIREMENTS AND USE OF AND PAYMENT OF RAILROAD FLAGMEN.
3. HORIZONTAL AND VERTICAL CONTROL POINTS FOR THE TRACK LAYOUT ARE IDENTIFIED IN THE CONTRACT DOCUMENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THESE CONTROL POINTS TO ASSURE THAT ALL FACILITIES INCLUDED IN THIS PROJECT ARE CONSTRUCTED AT THE CORRECT VERTICAL AND HORIZONTAL LOCATIONS.
4. BNSF RAILWAY WILL CONSTRUCT ALL TRACKWORK OF BNSF OWNED TRACKS ONLY. TRACKWORK DONE BY BNSF WILL INCLUDE ALL MATERIAL ABOVE TOP OF SUBBALLAST. THE CONTRACTOR IS RESPONSIBLE FOR ALL GRADING INCLUDING THE TOP OF SUBBALLAST. GRADING WORK CONSISTS OF SUBGRADE PREPARATION AND PLACEMENT OF SUBBALLAST TO GRADES INDICATED ON THE PLANS, AND TO COMPACTION SPECIFIED IN THE SPECIFICATIONS.
5. POSITIVE DRAINAGE MUST BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION TO PREVENT PONDING OF WATER.
6. THE CONTRACTOR SHALL COMPLY WITH THE STATE OF CALIFORNIA NPDES PERMIT REGARDING THE TREATMENT OF WATER BEFORE DISCHARGING OFF OF BNSF R/W.
7. CONTRACTOR SHALL SUBMIT A PHASING PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. ANY MODIFICATIONS TO THIS PHASING PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
8. LIMITS OF GRADING AS SHOWN ON THE PLANS ARE APPROXIMATE. WHERE LIMIT OF GRADING IS ADJACENT TO A BRIDGE, CROSSING, OR OTHER FACILITY, GRADING SHALL PROVIDE FOR A CONTINUOUS GRADE SO THAT THE RAILROAD CAN SUBSEQUENTLY LAY TRACK WITH NO ADDITIONAL WORK.
9. A NATIONAL ONE CALL IDENTIFICATION NUMBER MUST BE ISSUED BEFORE A "PERMIT TO EXCAVATE" IS VALID. THE CONTRACTOR SHALL CALL THE NATIONAL ONE CALL (811 (CALIFORNIA) OR 1-800-227-2600 (NATIONAL)) TWO WORKING DAYS PRIOR TO CONSTRUCTION TO OBTAIN A CALIFORNIA ONE CALL ID NUMBER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE FIBER OPTIC LINES. BNSF CALL BEFORE YOU DIG 1-800-422-4133.
10. THE CONTRACTOR SHALL BECOME FAMILIAR WITH LEGISLATION OUTLINING PROCEDURES FOR LOCATING UTILITIES BY HAND EXCAVATIONS AND COMPLY WITH ITS DIRECTIVE.
11. PRIOR TO EACH CONSTRUCTION ACTIVITY WITHIN BNSF RIGHT-OF-WAY, THE CONTRACTOR SHALL NOTIFY BNSF'S SIGNAL REPRESENTATIVE.
12. THE CONTRACTOR SHALL PROTECT ALL BNSF SIGNAL FACILITIES IN PLACE.
13. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS FOR CONFLICTS WITH EXISTING UTILITIES, SIGNAL CABLES/EQUIPMENT AND/OR OTHER ITEMS THAT MIGHT IMPAIR CONSTRUCTION ACTIVITIES. INCONSISTENCIES FOUND SHALL BE REPORTED TO THE ENGINEER.
14. REPAIRS TO FACILITIES INTENDED TO REMAIN IN PLACE SHALL BE MADE BY THE CONTRACTOR AT THE CONTRACTORS EXPENSE UNLESS OTHERWISE STATED BY THE ENGINEER.
15. ALL EXCAVATED WASTE MATERIAL FROM WITHIN BNSF ROW SHALL BE WASTED ONSITE AT LOCATIONS APPROVED BY THE ENGINEER.
16. ON-SITE CONSTRUCTION BY OTHERS, INCLUDING ROUTINE MAINTENANCE WORK, (BNSF FORCES, BNSF SIGNAL CONTRACTOR, FIBER OPTIC, UTILITIES, ETC.) MAY OCCUR DURING THE CONSTRUCTION PERIOD OF THIS CONTRACT. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES THROUGH THE ENGINEER SO AS TO MINIMIZE INTERFERENCE WITH OTHERS.
17. PRIOR TO COMMENCING WORK, ALL EXISTING SITE CONDITIONS SHALL BE FIELD VERIFIED WITH THE ENGINEER TO ASCERTAIN THE LIMITS OF WORK ACTIVITIES. THE CONTRACTOR SHALL SUBMIT AND RECEIVE THE ENGINEERS APPROVAL OF THE CONTRACTORS PROJECT SCHEDULE AND OPERATIONS PLAN. EACH ITEM OF WORK SHALL BE DESCRIBED AND ACCOUNTED FOR IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL REFER TO THE SPECIFICATIONS FOR FURTHER INFORMATION REGARDING SUBMITTAL REQUIREMENTS.
18. RAIL TRAFFIC DISRUPTIONS SHALL BE KEPT TO A MINIMUM. DISRUPTIONS IN RAIL TRAFFIC THAT MAY BE REQUIRED SHALL BE COORDINATED WITH THE ENGINEER BEFOREHAND. NO SUCH WORK SHALL BE COMMENCED WITHOUT THE ENGINEERS APPROVAL.
19. THE CONTRACTOR SHALL NOT PLACE MATERIAL AND/OR EQUIPMENT WITHIN 25 FEET OF AN ACTIVE TRACK AT ANY TIME WITHOUT PRIOR APPROVAL OF THE ENGINEER.
20. EXISTING RAILROAD SIGNAGE (INCLUDING SPEED SIGNS) SHALL BE MAINTAINED DURING THE CONSTRUCTION PERIOD. ALL RAILROAD SIGNAGE SHALL BE FULLY RESTORED UPON COMPLETION OF EACH DAYS WORK IN ACCORDANCE WITH BNSF ENGINEERING STANDARDS. PRIOR TO CONSTRUCTION, BNSF STANDARD PROJECT NOTICE SIGNS SHALL BE PLACED AT LOCATIONS AS DIRECTED BY THE ENGINEER. NO TRESPASSING SIGNS SHALL BE PLACED IN ACCORDANCE WITH BNSF STD DWG 3068 AND AS SHOWN ON THE DRAWINGS.
21. ALL WORK SHALL BE COORDINATED WITH BNSF'S SIGNAL ENGINEER, SIGNAL FORCES AND SIGNAL CONTRACTOR THRU THE ENGINEER, SIGN RELOCATIONS SHALL BE PERFORMED BY BNSF FORCES OR WITH APPROVAL FROM BNSF. WORK WILL BE PHASED TO NOT EFFECT THE CONTINUED OPERATION OF EXISTING SIGNAL SYSTEM DURING CONSTRUCTION. IN NO INSTANCE MAY WORK PROCEED IN ANY AREA WITHOUT ADVANCE APPROVAL OF BNSF'S SIGNAL ENGINEER. THE CONTRACTOR SHALL LOCATE ALL SIGNAL AND COMMUNICATION CONDUITS, CABLES, WIRES, OR OTHER TRACK, TRACK BED, AND RIGHT-OF-WAY.
22. CONSTRUCT WALKWAYS AND MAINTENANCE ROADS PER BNSF STANDARDS.
23. DIMENSIONS SHOWN IN PARENTHESES INDICATE APPROXIMATE EXISTING DIMENSIONS. WHERE ELEVATIONS ARE SHOWN IN PARENTHESES AT JOIN LOCATIONS, THE CONTRACTOR SHALL VERIFY THESE ELEVATIONS PRIOR TO CONSTRUCTION AND JOIN FEATURES AT EXISTING ELEVATIONS.
24. ALL EXISTING FENCES ALONG THE RIGHT-OF-WAY SHALL BE PROTECTED IN PLACE, UNLESS OTHERWISE NOTED, AT THE OPTION OF THE CONTRACTOR, FENCING MAY BE REMOVED TO FACILITATE CONSTRUCTION, HOWEVER FENCING MUST BE REPLACED, IN KIND, AND THE CONSTRUCTION SITE MUST REMAIN SECURE AT ALL TIMES.

DEFINITIONS:

A. TRACK OUTAGE: TRACK WHICH IS OUT OF SERVICE FOR A GIVEN PERIOD OF TIME
B. ACTIVE TRACK: TRACK ON WHICH TRAINS ARE OPERATING AND INTERRUPTION OF SERVICE MAY OCCUR ONLY WITHIN AN APPROVED "WINDOW" AS DEFINED BELOW.
C. FOULED TRACK: TRACK FOULED WHEN AN OBSTRUCTION INCLUDING A WORKING CREW IS WITHIN 25 FEET FROM THE CENTERLINE OF THE TRACK OR WHEN AN OVERHEAD OBSTRUCTION IS PLACED WITHIN 22'-6" ABOVE THE TOP OF RAIL. WORK MAY BE PERFORMED UNDER THE PROTECTION OF A RAILROAD .
D. WINDOW: A GIVEN PERIOD OF TIME BETWEEN OPERATING TRAINS WHERE A TRACK MAY BE TAKEN OUT OF SERVICE, WITH THE STIPULATION THAT THE TRACK SHALL BE BACK IN SERVICE AT THE END OF THE GIVEN PERIOD OF TIME.

ABBREVIATIONS

&	AND	MP	MILEPOST OR MEDIUM PRESSURE
@	AT	MT	MAIN TRACK
°	DEGREES	MT1	MAIN TRACK 1
'	FOOT OR FEET OR MINUTE(S)	MT2	MAIN TRACK 2
"	INCH OR INCHES OR SECOND(S)%PERCENT	MT3	MAIN TRACK 3
#	POUND OR NUMBER	MTD	MULTIPLE TILE DUCTN
Δ	CENTRAL ANGLE OF CIRCULAR CURVE	NO	NUMBER OR NORTHERN
AC	ASPHALT CONCRETE	NTS	NOT TO SCALE
ACQ	AQUISITION	OD	OUTSIDE DIAMETER
AP	ANGLE POINT	OHWM	ORDINARY HIGH WATER MARK
APE	AREA OF POTENTIAL EFFECT	OH	OVERHEAD
APPROX	APPROXIMATELY	OTM	OTHER TRACK MATERIALS
APWA	AMERICAN PUBLIC WORKS ASSOCIATION	O. TO O.	OUT TO OUT
AVE	AVENUE	P	PASSENGER
BC	BEGINNING OF CURVE	PSGR	PASSENGER
BLVD	BOULEVARD	PB	PULLBOX
BNSF	BNSF RAILWAY COMPANY	PC	POINT OF CURVE
BM	BENCHMARK	PCC	POINT OF COMPOUND CURVE
BR	BRIDGE	PCC	PORTLAND CEMENT CONCRETE
BXC	CONCRETE BOX	PI	POINT OF INTERSECTION
CAPS	CORRUGATED ARCH PIPE - STEEL	PIP	PROTECT IN PLACE
CB	CATCH BASIN	PITO	POINT OF INTERSECTION OF TURNOUT
CC	CENTER OF CURVE	POB	POINT OF BEGINNING
CIP	CAST IRON PIPE OR CAST IN PLACE	POC	POINT OF CONNECTION
C/L	CENTERLINE	POE	POINT OF ENDING
CONC	CONCRETE	POT	POINT OF TANGENT
CMP	CORRUGATED METAL PIPE	PRC	POINT OF REVERSING CURVATURE
CP	CONCRETE PIPE	PROP OR PR.	PROPOSED
CPUC	CALIFORNIA PUBLIC UTILITIES COMMISSION	P.S. OR PS	POINT OF SWITCH
CPS	CORRUGATED PIPE - STEEL	PS	STEEL PIPE (SMOOTH WALL)
CORR	CORRUGATED	PSAP	STRUCTURAL STEEL ARCH PLATE PIPE
CS	CURVE TO SPIRAL	PT	POINT OF TANGENT
CT	CONCRETE TIES	PVC	POINT OF VERTICAL CURVE OR POLYVINYL CHLORIDE (PIPE)
DC	DEGREE OF CURVE	PVI	POINT OF VERTICAL INTERSECTION
DEMO	DEMOLISH	PVT	POINT OF VERTICAL TANGENT
DESC	DESCRIPTION	R	RADIUS OR RATE OF CHANGE
DI	DUCTILE IRON	R/W OR ROW	RIGHT-OF-WAY
DIP	DUCTILE IRON PIPE	RCP	REINFORCED CONCRETE PIPE
DOT	DEPARTMENT OF TRANSPORTATION	RD	ROAD
DR	DRIVE	RH	RIGHT HAND
DU	DUCT	RPM	RAISED PAVEMENT MARKER
DWG	DRAWING	RR	RAILROAD
E	EAST OR EASTERLY OR EASTING	RT	RIGHT
Ea	SUPERELEVATION, ACTUAL	S	SOUTH OR SOUTHERLY OR SLOPE
EC	END OF CURVE OR EDGE OF CONCRETE	SC	SPIRAL TO CURVE
EGL	ENERGY GRADE LINE	SCG	SOCAL GAS
ELEC	ELECTRICAL	SID	SIDING
EL	ELEVATION	SDMH	STORM DRAIN MANHOLE
ELEV	ELEVATION	SF	SQUARE FOOT OR SQUARE FEET
EQ	EQUAL OR EQUATION	SO	SOUTHERN
EPC	ELLIPTICAL PIPE - CONCRETE	SMH	SEWER MANHOLE
EW	EACH WAY	SSMH	SEWER MANHOLE
Eu	SUPERELEVATION, UNBALANCED	SSP	SMOOTH STEEL PIPE
EX	EXISTING	STA	STATION
EXIST	EXISTING	STD	STANDARD
F	FREIGHT	ST	STREET OR SPIRAL TO TANGENT
FH	FIRE HYDRANT	SUB	SUBDIVISION
FL	FLOWLINE	T	TANGENT
F.O.	FIBER OPTIC	TC	TRACK CENTER(S) OR TOP OF CURB
FS	FINISHED SURFACE	TG	TOP OF GRATE
FT	FOOT OR FEET	TGC	THE GAS COMPANY
G	GRADE	T.O. OR TO	TURNOUT
G1	GRADE ENTERING VERTICAL CURVE	T/R TO TOR	TOP OF RAIL
G2	GRADE EXITING VERTICAL CURVE	TF	TRACK FOOT OR TRACK FEET
GA	GAGE	TRK	TRACK
GB	GRADE BREAK	TS	TANGENT TO SPIRAL
GM	GAS METER	TT	TIMBER TRANSITION TIES
GRD	GROUND	TYP	TYPICAL
GV	GAS VALVE	UD	UNDERDRAIN
HGL	HYDRAULIC GRADE LINE	UP	UNDERPASS
HORIZ	HORIZONTAL	UPRR	UNION PACIFIC RAILROAD
HP	HIGH POINT OR HIGH PRESSURE	V	VELOCITY
IND	INDUSTRY SPUR	VAR	VARIES
INV	INVERT	VCP	VITRIFIED CLAY PIPE
L	LENGTH	VERT	VERTICAL
LACFCD	LA COUNTY FLOOD CONTROL DISTRICT	W	WEST OR WESTERLY
LC	LENGTH OF CURVE (CIRCULAR)	WM	WATER METER
LF	LINEAR FOOT OR LINEAR FEET	WV	WATER VALVE
LS	LENGTH OF SPIRAL	XING	CROSSING
LT	LEFT	XO	CROSSOVER
MAX	MAXIMUM		
MH	MANHOLE		
MN	MINIMUM		

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GENERAL NOTES AND ABBREVIATIONS

FILENAME	16542-MALA-G-GN03.dgn	SHEET	3 OF 19
SCALE	(FULL-SIZE) - AS NOTED		

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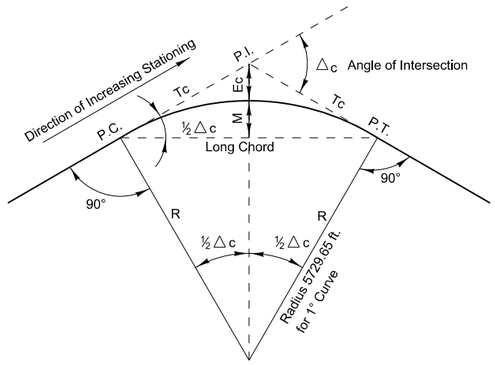
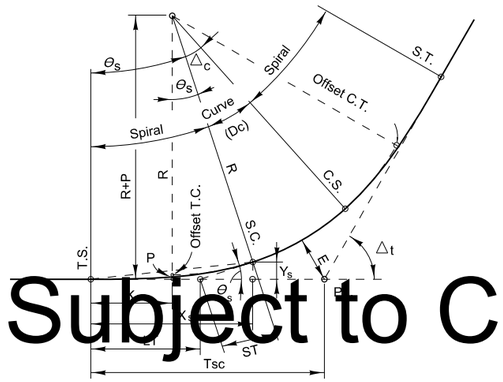
LEGEND

- REMOVE TRACK
- SHIFT TRACK
- REALIGNED TRACK
- UPGRADE TRACK
- EXISTING TRACK
- EXISTING INDUSTRY TRACK
- COUNTY LINE
- PROPERTY LINE
- PROPOSED TRACK
- EXISTING R.O.W.
- PROPOSED R.O.W.
- LIMITS OF GRADING
- FUTURE TRACK
- 1' CONTOUR LINE
- 5' CONTOUR LINE
- 1' PROPOSED CONTOUR LINE
- 5' PROPOSED CONTOUR LINE
- PROPOSED ACCESS ROAD
- EXISTING CHAIN LINK FENCE
- EXISTING BARBED WIRE FENCE
- EXISTING BARBED WIRE FENCE
- PROPOSED SILT FENCE
- TURNOUT NUMBER
- DITCH
- GAME FENCE
- FLOW DIRECTION
- FUEL OR OIL LINES
- GAS LINE
- TOXIC CHEMICAL LINES
- TOXIC GAS LINES
- AIR LINES
- CABLE TV LINES
- OVERHEAD POWER LINES
- ELECTRIC LINES
- HIGH VOLTAGE ELEC. LINES
- SEWER LINES
- STEAM LINES
- STORM LINES
- TELEPHONE LINES
- WATER LINES
- CUT LINES
- FILL LINES
- FIBER OPTIC LINE
- EXISTING ACCESS ROAD

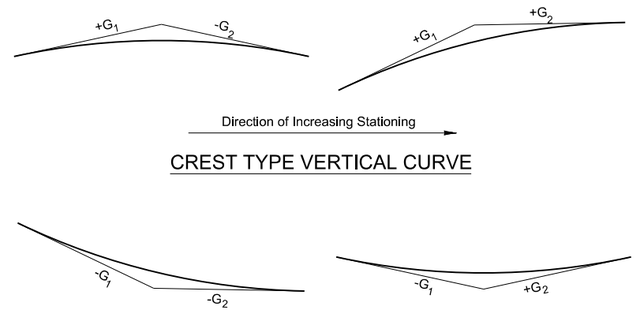
- REMOVE EXISTING RAILROAD TURNOUT
- SHIFT EXISTING RAILROAD TURNOUT
- RAILROAD TURNOUT (ELECTRIC LOCK)
- RAILROAD TURNOUT (HAND THROW)
- RAILROAD TURNOUT (POWER SWITCH)
- EXISTING POWER POLE W/ GUY WIRE
- EXISTING RAILROAD SIGNAL
- PROPOSED RAILROAD SIGNAL
- EXISTING RAILROAD SIGNAL CABINET
- PROPOSED RAILROAD SIGNAL CABINET
- TRACK DETECTOR
- HOT BOX DETECTOR
- CULVERT
- MILEPOST
- SIGN
- RR CROSSING GATE
- GRADE CROSSING PANEL
- GAS VALVE
- TELEPHONE RISER
- STORM DRAIN MANHOLE
- SANITARY SEWER MANHOLE
- STAND PIPE
- UTILITY POLE
- GUY ANCHOR
- LUMINAIRE
- POWER VAULT
- TELEPHONE VAULT
- FIBER OPTIC WARNING SIGN
- FIBER OPTIC VAULT
- WATER METER BOX
- CONTROL POINT SYMBOL
- BORING SYMBOL
- TEST PIT SYMBOL
- GATE
- CATTLE GUARD
- WILDLIFE RAMP
- CULTURAL RESOURCES AREA (PROTECT IN PLACE)



CURVE

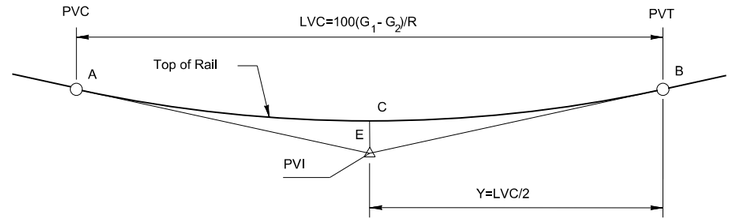


SPIRAL - CURVE - SPIRAL



CREST TYPE VERTICAL CURVE

SAG TYPE VERTICAL CURVE



R = Rate of Change in Grade per 100 ft Station = V/L
G_1, G_2 = Gradient Expressed as Feet Per 100 ft Station
LVC = Length of Vertical Curve in Feet.
E = Vertical Distance Between PVI and Vertical Curve.
ML Crest R = 0.10
ML Sag R = 0.05

HORIZONTAL CURVE FORMULA

Using Chord Definition Curve With Spirals

- $\triangle t$ = Total Angle
- Θs = Spiral Angle = Ls Dc / 200
- $\triangle c$ = Circular Curve Angle
- $\triangle t$ = Total Curve Angle (Spiral + Curve + Spiral)
- Dc = Degree of Circular Curve = $100 \frac{\triangle c}{L}$, also sin (1/2 Dc) = $\frac{50}{R}$
- Ls = Length of Spiral Curve
- Lc = Length of Circular Curve = $100 \frac{\triangle c}{Dc}$
- LC = Long Chord of Circular Curve = 2R sin (1/2△c)
- M = Middle Ordinate of Circular Curve = R(1 - cos (1/2△c))
- R = Radius of Circular Curve = 50 / (sin (Dc/2))
- Tc = Tangent of Circular Curve = R tan (1/2△c)
- Tsc = Total Tangent Length (SPIRAL - CURVE - SPIRAL)
- LT = Long Tangent of Spiral Curve
- ST = Short Tangent of Spiral Curve
- K, P = Coordinates of Offset Point Referred to Total Tangent as X-Axis and TS as Origin
- Xs Ys = Coordinates of S.C. Point Referred to Total Tangent as X-Axis and TS as Origin
- E = External Distance from Circular Curve to Point of Intersection for Total Curve

VERTICAL CURVE GEOMETRY

HORIZONTAL CURVE DEFINITIONS

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SERIES GN04 OF GN04

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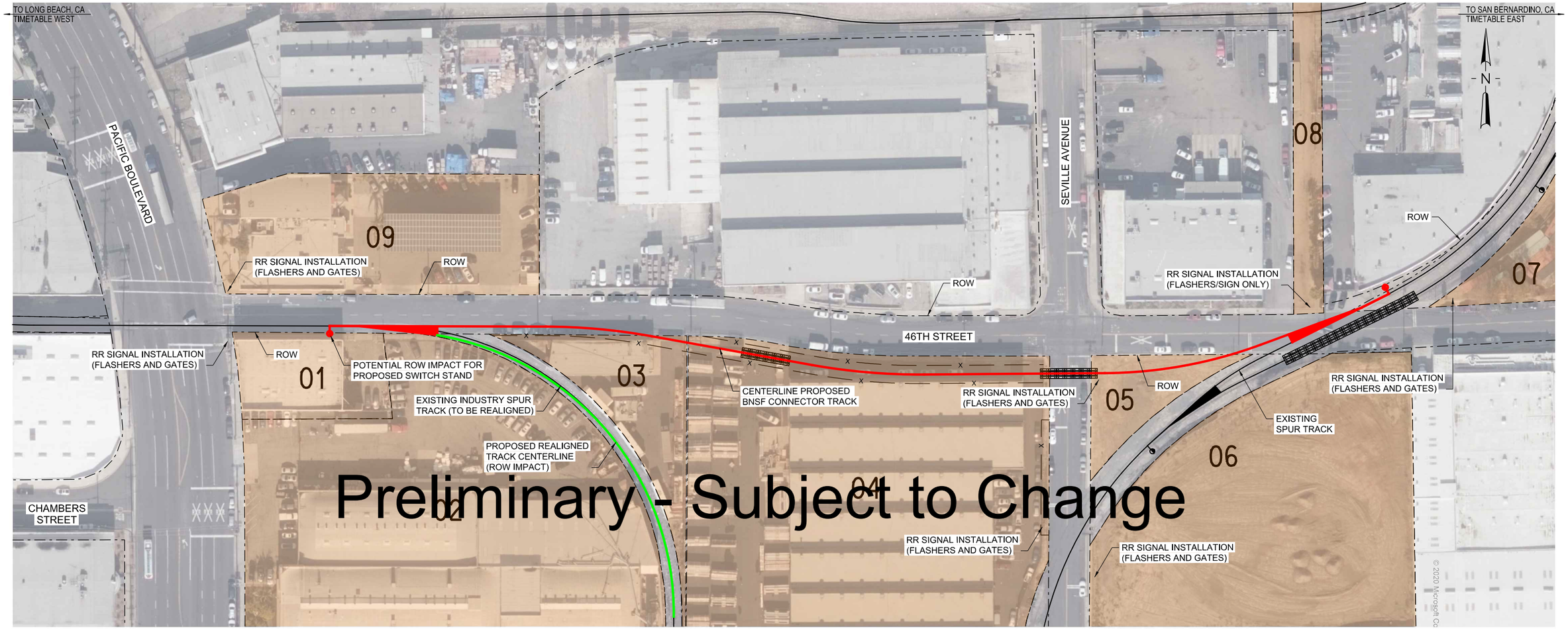
LEGEND AND CURVE DIAGRAMS

FILENAME	16542-MALA-G-GN04.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 4 OF 19



RIGHT-OF-WAY IMPACTS (ESTIMATED)		
ID	AIN	OWNER
01	6308-004-011	JONES, JEREMY
02	6308-004-012	GUERRA, JOSE & LIDIA
03	6308-004-012	GUERRA, JOSE & LIDIA
04	6308-004-013	ALPINE LEONIS LLC
05	6308-002-017	PBR SEVILLE LLC
06	6308-002-016	PBR SEVILLE LLC
07	6308-001-023	MCI PROPERTIES LLC
08	6308-001-026	CHAHAL WHITE LLC
09	6308-005-007	FLORMAN FAMILY
–	--	CITY VERNON

LEGEND:

EXISTING ADJACENT AND/OR IMPACTED RIGHTS-OF-WAY (OUTSIDE OF BNSF ROW)

NOTES:

1. FOR LOCATIONS OF ALL PROPOSED RR SIGNALS, SIGNAGE, FLASHERS, AND GATE ARMS SEE CIVIL AND TRACK PLANS
2. STREET TRAFFIC SIGNALS, AND ANY ASSOCIATED ROW IMPACTS, NOT SHOWN FOR CLARITY
3. PROPOSED/REPLACED ROW GATES, NOT SHOWN FOR CLARITY
4. FOR LOCATIONS OF ALL PROPOSED CITY OF VERNON STREET RIGHT-OF-WAY IMPROVEMENTS (MEDIANS, SIGNAGE, ETC...) SEE CIVIL AND TRACK PLANS

50 25 0 50 100
SCALE: 1" = 50'

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SERIES ROW01 OF ROW02

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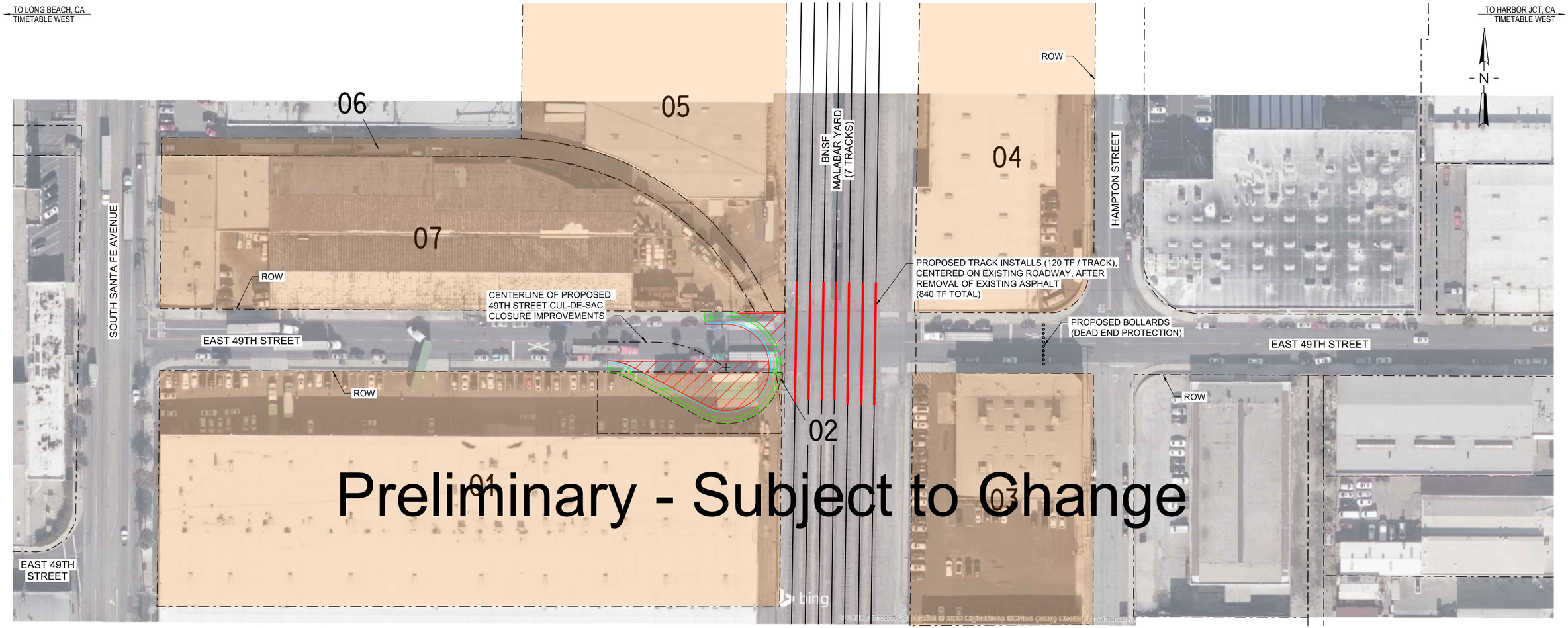
RIGHT-OF-WAY IMPACTS

FILENAME	16542_LAJ-C-ROW01.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 5 OF 19



RIGHT-OF-WAY IMPACTS (ESTIMATED)		
ID	AIN	OWNER
01	6308-011-010	KB NEW YORK BH LLC
02	6308-011-901	LACMTA
03	6308-010-037	2516 MILANI LLC
04	6308-009-030	FINKEL-HAMPTON LLC
05	6308-007-012	GREAT AMERICAN HOLDINGS INV LLC
06	6308-007-020	GREAT AMERICAN HOLDINGS INV LLC
07	6308-007-006	MELIDO, MICHAEL
	–	CITY VERNON

NOTES:

1. FOR LOCATIONS OF ALL PROPOSED CITY OF VERNON STREET RIGHT-OF-WAY IMPROVEMENTS (SIDEWALKS, SIGNAGE, ETC...) SEE CIVIL PLANS
2. PROPOSED/REPLACED ROW GATES (TO BE DETERMINED), NOT SHOWN FOR CLARITY
3. STREET TRAFFIC SIGNALS (TO BE DETERMINED), AND ANY ASSOCIATED ROW IMPACTS, NOT SHOWN FOR CLARITY

LEGEND:

EXISTING ADJACENT AND/OR IMPACTED RIGHTS-OF-WAY (OUTSIDE OF BNSF ROW)

50 25 0 50 100
SCALE: 1" = 50'

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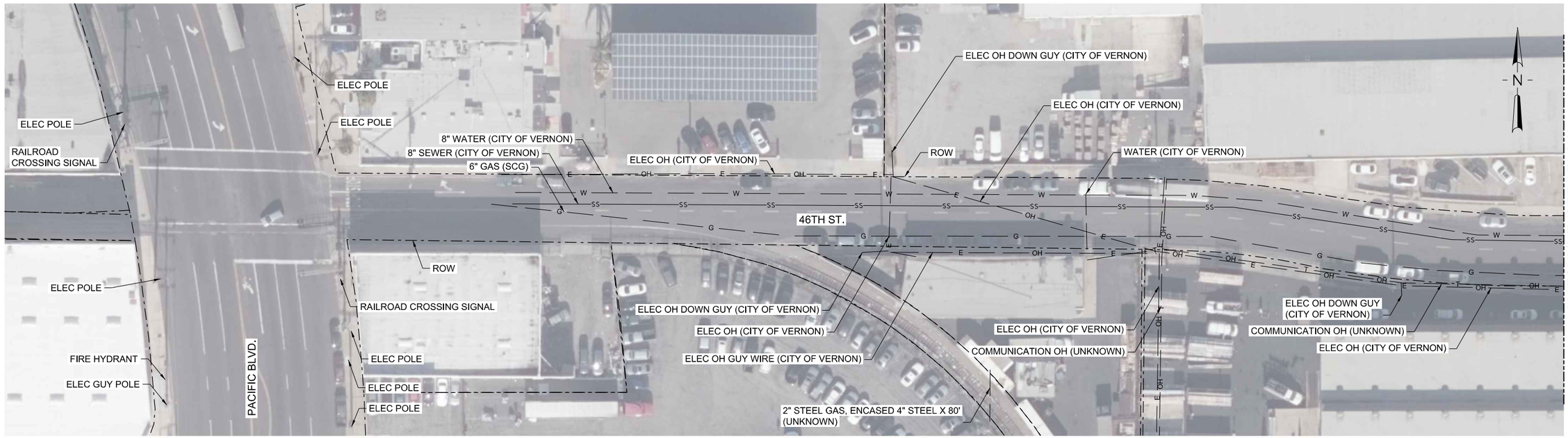
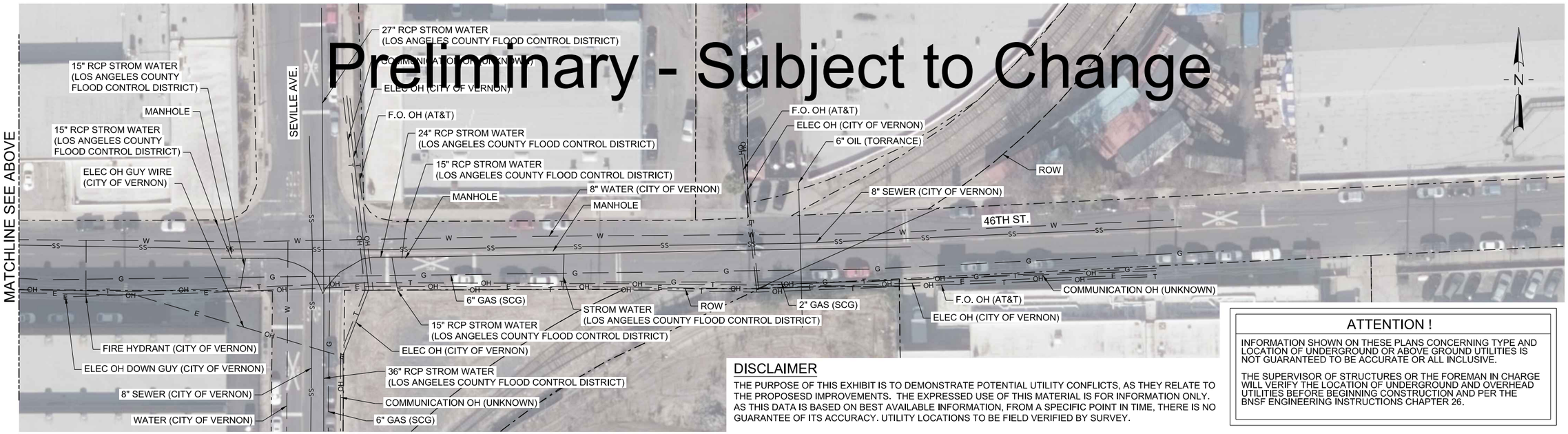
RIGHT-OF-WAY IMPACTS

FILENAME	16542_MALA-C-ROW02.dgn	SHEET
SCALE	(FULL-SIZE) - AS NOTED	6 OF 19





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ATTENTION !

INFORMATION SHOWN ON THESE PLANS CONCERNING TYPE AND LOCATION OF UNDERGROUND OR ABOVE GROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE.

THE SUPERVISOR OF STRUCTURES OR THE FOREMAN IN CHARGE WILL VERIFY THE LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES BEFORE BEGINNING CONSTRUCTION AND PER THE BNSF ENGINEERING INSTRUCTIONS CHAPTER 26.

30 15 0 30 60
SCALE: 1" = 30'

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SERIES UT01 OF UT02

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BNSF LAJ CONNECTOR EXISTING UTILITIES

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SCALE	(FULL-SIZE) - AS NOTED

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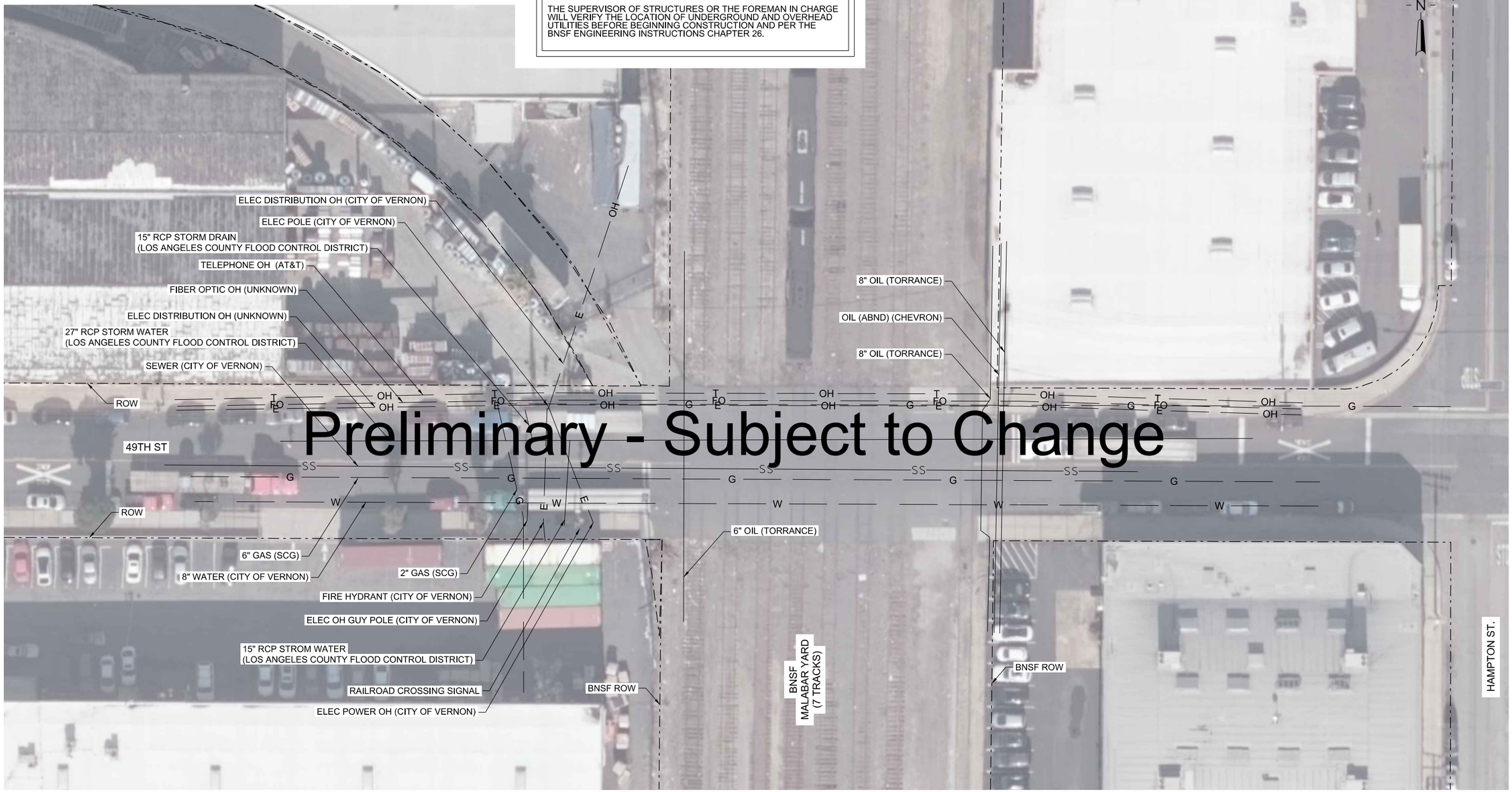
ATTENTION !

INFORMATION SHOWN ON THESE PLANS CONCERNING TYPE AND LOCATION OF UNDERGROUND OR ABOVE GROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE.

THE SUPERVISOR OF STRUCTURES OR THE FOREMAN IN CHARGE WILL VERIFY THE LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES BEFORE BEGINNING CONSTRUCTION AND PER THE BNSF ENGINEERING INSTRUCTIONS CHAPTER 26.



Preliminary - Subject to Change

20 10 0 20 40
SCALE: 1" = 20'

NOT FOR CONSTRUCTION

SERIES UT02 OF UT02

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ISSUE	DATE	DESCRIPTION
1	06/30/20	10% CONCEPTUAL PLANS

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BNSF RAILWAY

HARBOR AND SAN BERNARDINO SUBDIVISION

DESIGNED:	HDR-BK
CHECKED:	HDR-BK
DRAWN:	HDR-JS
CHECKED:	HDR-EC
DATE:	JUNE 30, 2020
AUTH:	
LINE SEG:	7604/7665

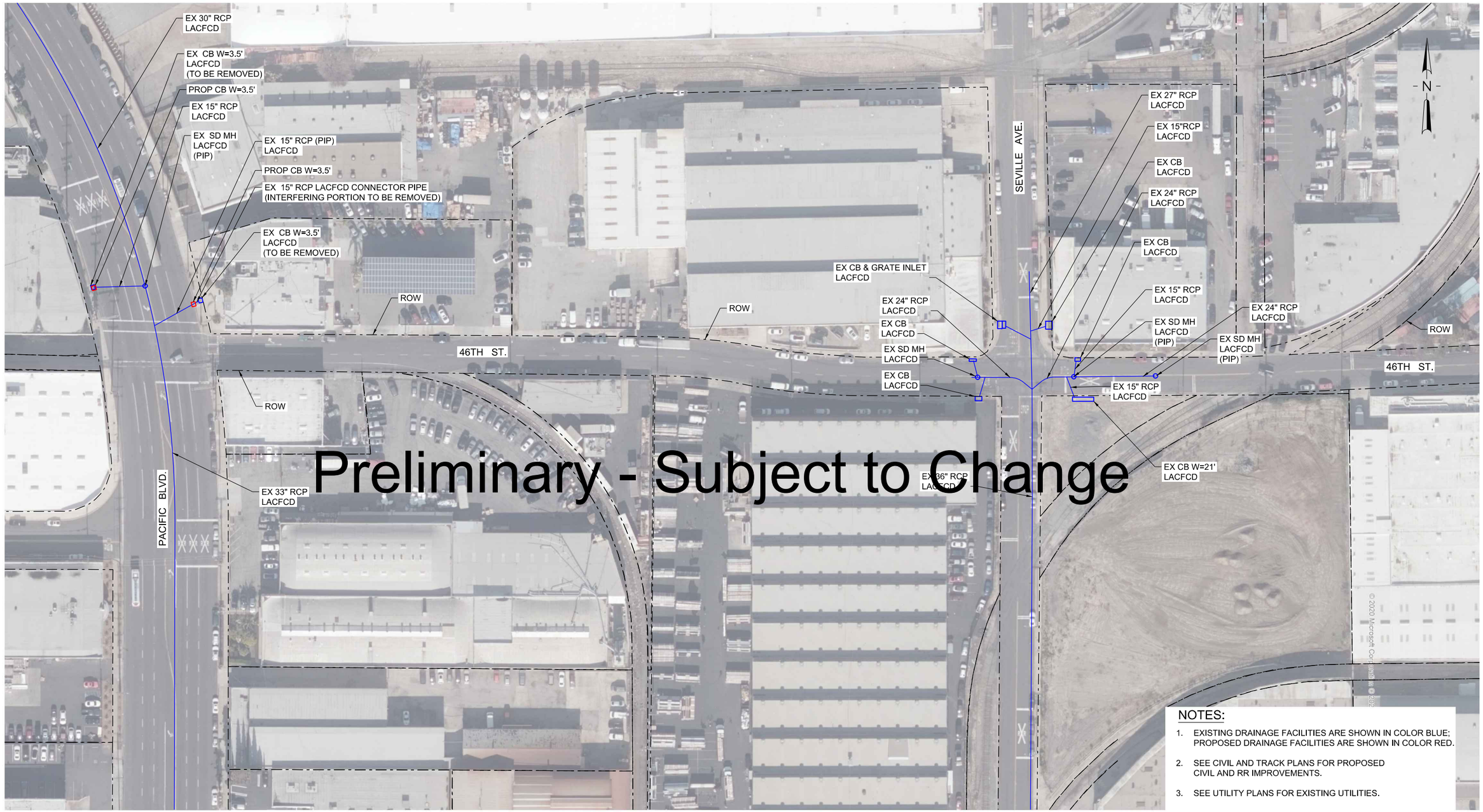
BNSF RAILWAY - HARBOR AND SAN BERNARDINO
SUBDIVISION - BETWEEN TRACKS 7604-2750 AND 7665-1010

MALABAR YARD/49TH ST CLOSURE EXISTING UTILITIES

FILENAME	MALA-U-UT02.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 8 OF 19

PLOT DATE: 6/30/2020 4:54:00 PM WSTEBOK



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NOTES:

1. EXISTING DRAINAGE FACILITIES ARE SHOWN IN COLOR BLUE; PROPOSED DRAINAGE FACILITIES ARE SHOWN IN COLOR RED.
2. SEE CIVIL AND TRACK PLANS FOR PROPOSED CIVIL AND RR IMPROVEMENTS.
3. SEE UTILITY PLANS FOR EXISTING UTILITIES.

50 25 0 50 100
SCALE: 1" = 50'

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SERIES SD01 OF SD02

PLOT DATE: 6/30/2020 5:31:31 PM WSTEBOK

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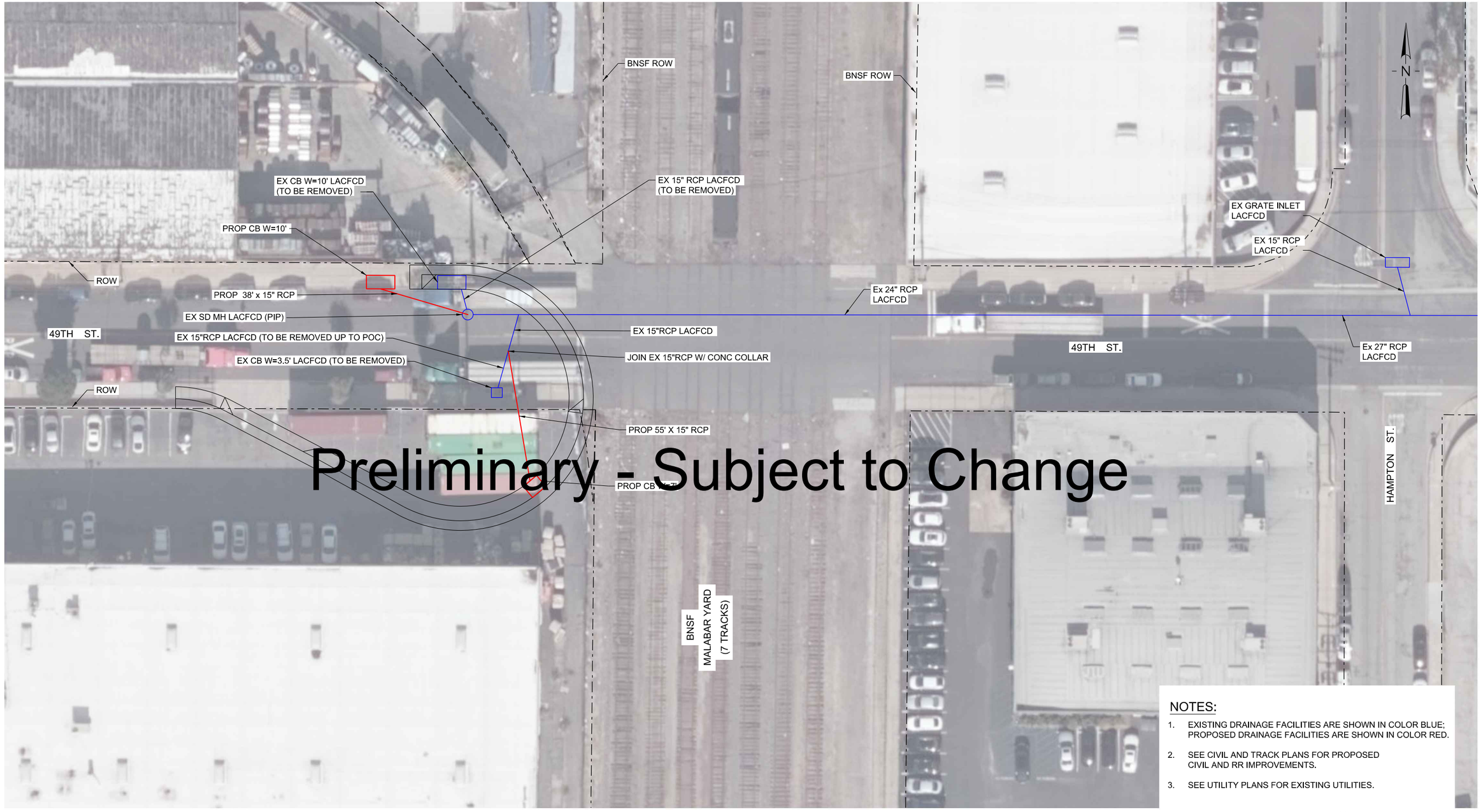
BNSF RAILWAY - HARBOR AND SAN BERNARDINO
SUBDIVISION - BETWEEN TRACKS 7604-2750 AND 7665-1010

BNSF LAJ CONNECTOR EXISTING/PROPOSED DRAINAGE

FILENAME	LAJ-SD-01.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 9 OF 19



Preliminary - Subject to Change

NOTES:

1. EXISTING DRAINAGE FACILITIES ARE SHOWN IN COLOR BLUE; PROPOSED DRAINAGE FACILITIES ARE SHOWN IN COLOR RED.
2. SEE CIVIL AND TRACK PLANS FOR PROPOSED CIVIL AND RR IMPROVEMENTS.
3. SEE UTILITY PLANS FOR EXISTING UTILITIES.

20 10 0 20 40
SCALE: 1" = 20'

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CHECKED:	HDR-EC
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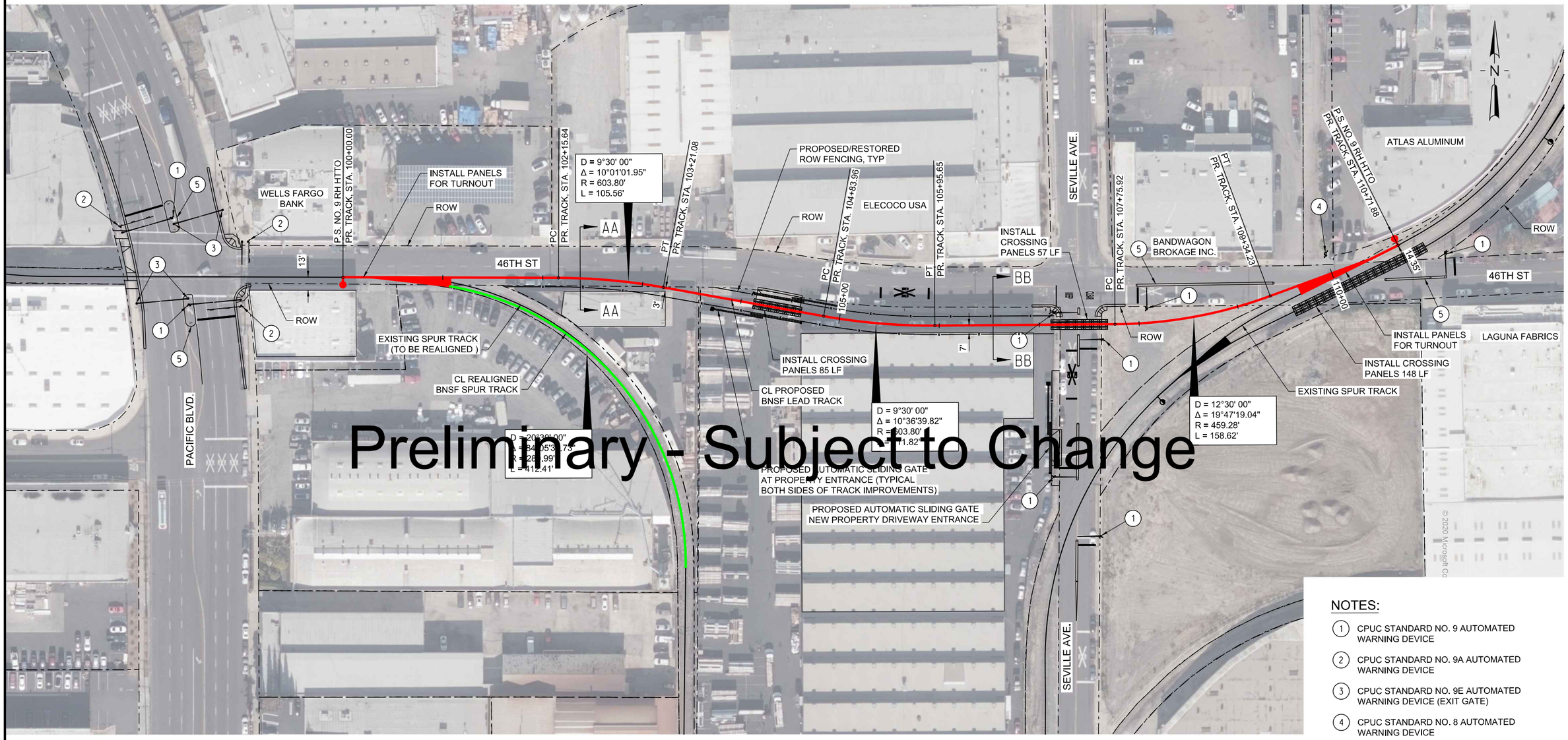
BNSF RAILWAY - HARBOR AND SAN BERNARDINO
SUBDIVISION - BETWEEN TRACKS 7604-2750 AND 7665-1010

MALABAR YARD/49TH ST CLOSURE EXISTING/PROPOSED DRAINAGE

FILENAME	MALA-SD-01.dgn	SHEET 10 OF 19
SCALE	(FULL-SIZE) - AS NOTED	



Preliminary - Subject to Change

GENERAL NOTES:

1. ROADWAY TRAFFIC SIGNALS, PENDING TRAFFIC STUDY ANALAYIS, NOT SHOWN FOR CLARITY (ASSUMED AT PACIFIC BLVD AND SEVILLE AVE INTERSECTIONS WITH 46TH STREET)
2. PROPOSED/REPLACEMENT ROW FENCING AND GATES NOT SHOWN FOR CLARITY (DETAILS PENDING STAKEHOLDER COORDINATION)

NOTES:

1. CPUC STANDARD NO. 9 AUTOMATED WARNING DEVICE
2. CPUC STANDARD NO. 9A AUTOMATED WARNING DEVICE
3. CPUC STANDARD NO. 9E AUTOMATED WARNING DEVICE (EXIT GATE)
4. CPUC STANDARD NO. 8 AUTOMATED WARNING DEVICE
5. PROPOSED MEDIAN

50 25 0 50 100
SCALE: 1" = 50'

NOT FOR CONSTRUCTION

SERIES P01 OF P02

PLOT DATE: 7/1/2020 2:24:39 PM WSTEBOK

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CHECKED:	HDR-JR
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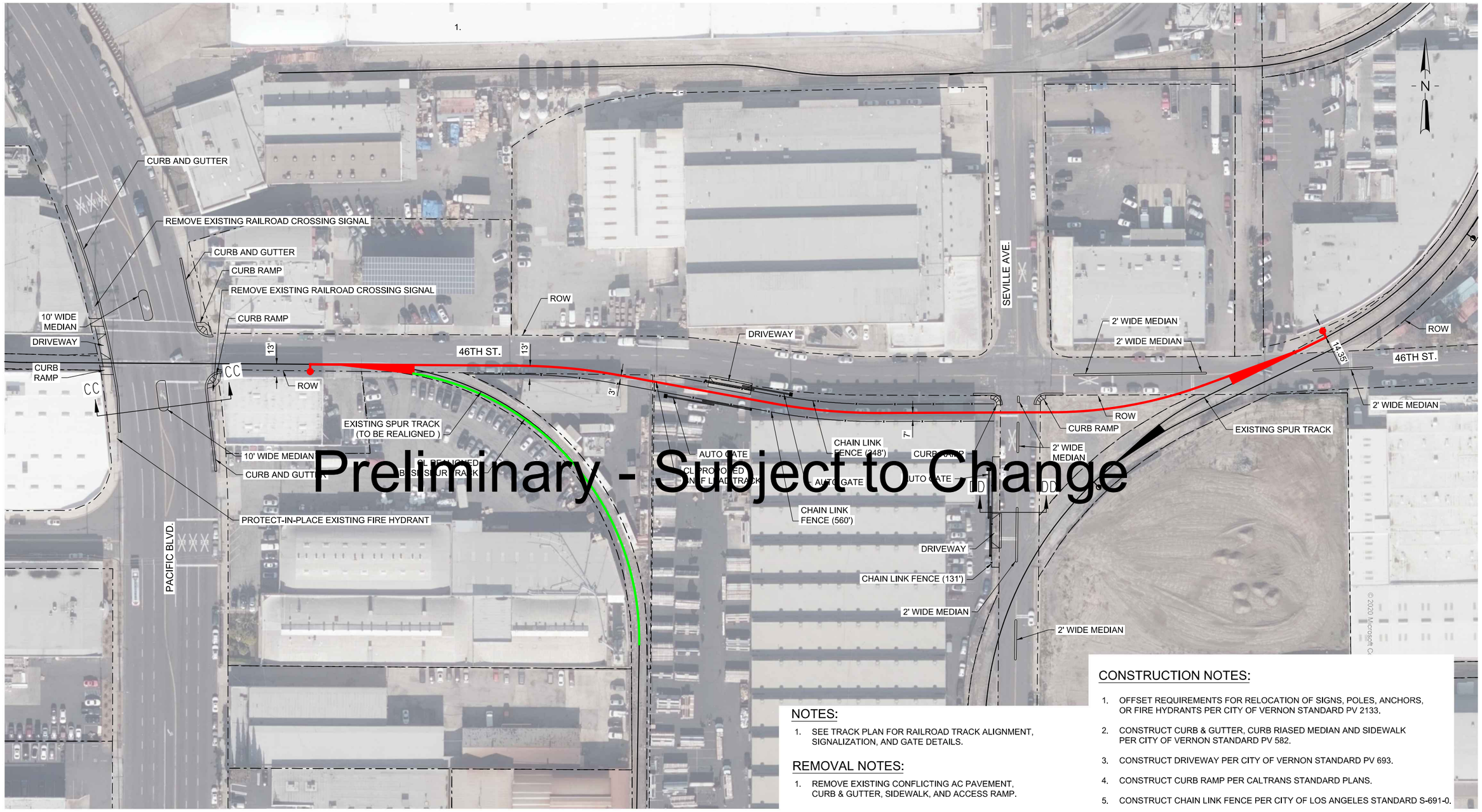
BNSF RAILWAY - HARBOR AND SAN BERNARDINO
SUBDIVISION - BETWEEN TRACKS 7604-2750 AND 7665-1010

BNSF LAJ CONNECTOR TRACK PLAN

FILENAME	16542_MALA-R-LD-P01.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 11 OF 19

1.



Preliminary - Subject to Change

NOTES:

1. SEE TRACK PLAN FOR RAILROAD TRACK ALIGNMENT, SIGNALIZATION, AND GATE DETAILS.

REMOVAL NOTES:

1. REMOVE EXISTING CONFLICTING AC PAVEMENT, CURB & GUTTER, SIDEWALK, AND ACCESS RAMP.

CONSTRUCTION NOTES:

1. OFFSET REQUIREMENTS FOR RELOCATION OF SIGNS, POLES, ANCHORS, OR FIRE HYDRANTS PER CITY OF VERNON STANDARD PV 2133.
2. CONSTRUCT CURB & GUTTER, CURB RIASED MEDIAN AND SIDEWALK PER CITY OF VERNON STANDARD PV 582.
3. CONSTRUCT DRIVEWAY PER CITY OF VERNON STANDARD PV 693.
4. CONSTRUCT CURB RAMP PER CALTRANS STANDARD PLANS.
5. CONSTRUCT CHAIN LINK FENCE PER CITY OF LOS ANGELES STANDARD S-691-0.

50 25 0 50 100
SCALE: 1" = 50'

NOT FOR CONSTRUCTION

SERIES P02 OF P02

PLOT DATE: 6/30/2020 4:55:38 PM WSTEBOK

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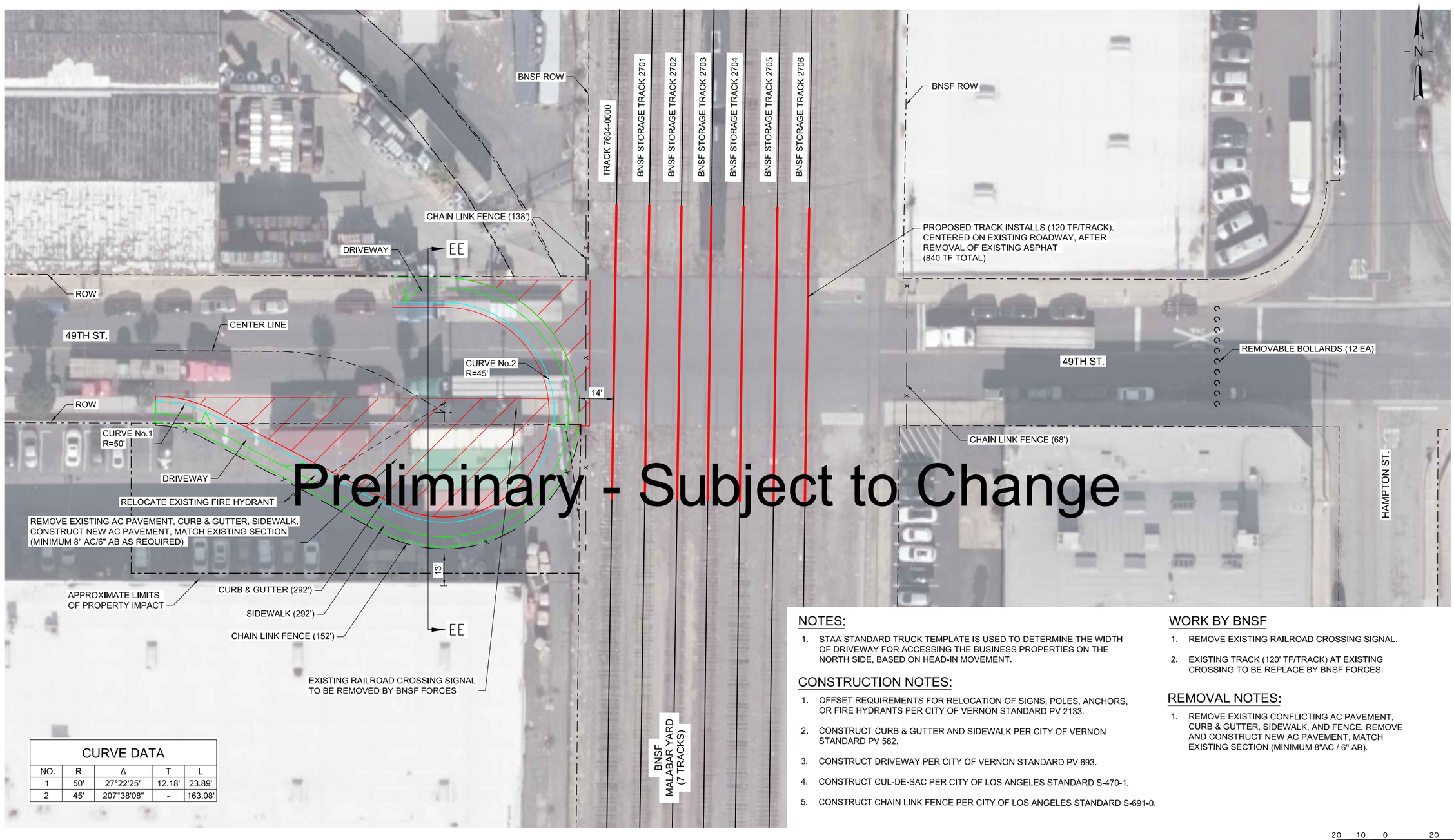
BNSF RAILWAY - HARBOR AND SAN BERNARDINO SUBDIVISION - BETWEEN TRACKS 7604-2750 AND 7665-1010

BNSF LAJ CONNECTOR CIVIL PLAN

FILENAME	LAJ-C-P02.dgn	SHEET 12 OF 19
SCALE	(FULL-SIZE) - AS NOTED	



Preliminary - Subject to Change

CURVE DATA				
NO.	R	Δ	T	L
1	50'	27°22'25"	12.18'	23.89'
2	45'	207°38'08"	-	163.08'

NOTES:

1. STAA STANDARD TRUCK TEMPLATE IS USED TO DETERMINE THE WIDTH OF DRIVEWAY FOR ACCESSING THE BUSINESS PROPERTIES ON THE NORTH SIDE, BASED ON HEAD-IN MOVEMENT.

CONSTRUCTION NOTES:

1. OFFSET REQUIREMENTS FOR RELOCATION OF SIGNS, POLES, ANCHORS, OR FIRE HYDRANTS PER CITY OF VERNON STANDARD PV 2133.
2. CONSTRUCT CURB & GUTTER AND SIDEWALK PER CITY OF VERNON STANDARD PV 582.
3. CONSTRUCT DRIVEWAY PER CITY OF VERNON STANDARD PV 693.
4. CONSTRUCT CUL-DE-SAC PER CITY OF LOS ANGELES STANDARD S-470-1.
5. CONSTRUCT CHAIN LINK FENCE PER CITY OF LOS ANGELES STANDARD S-691-0.

WORK BY BNSF

1. REMOVE EXISTING RAILROAD CROSSING SIGNAL.
2. EXISTING TRACK (120' TF/TRACK) AT EXISTING CROSSING TO BE REPLACE BY BNSF FORCES.

REMOVAL NOTES:

1. REMOVE EXISTING CONFLICTING AC PAVEMENT, CURB & GUTTER, SIDEWALK, AND FENCE. REMOVE AND CONSTRUCT NEW AC PAVEMENT, MATCH EXISTING SECTION (MINIMUM 8"AC / 6" AB).

20 10 0 20 40
SCALE: 1" = 20'

NOT FOR CONSTRUCTION

SERIES RD01 OF RD03

PLOT DATE: 6/30/2020 5:17:50 PM WSTEBOK

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BNSF RAILWAY - HARBOR AND SAN BERNARDINO SUBDIVISION - BETWEEN TRACKS 7604-2750 AND 7665-1010

MALABAR YARD/49TH ST CLOSURE GRADE CROSSING

FILENAME	MALA-C-RD01.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 13 OF 19

NOTES:

1. SEE TRACK PLAN FOR RAILROAD TRACK ALIGNMENT, SIGNALIZATION, AND GATE DETAILS.

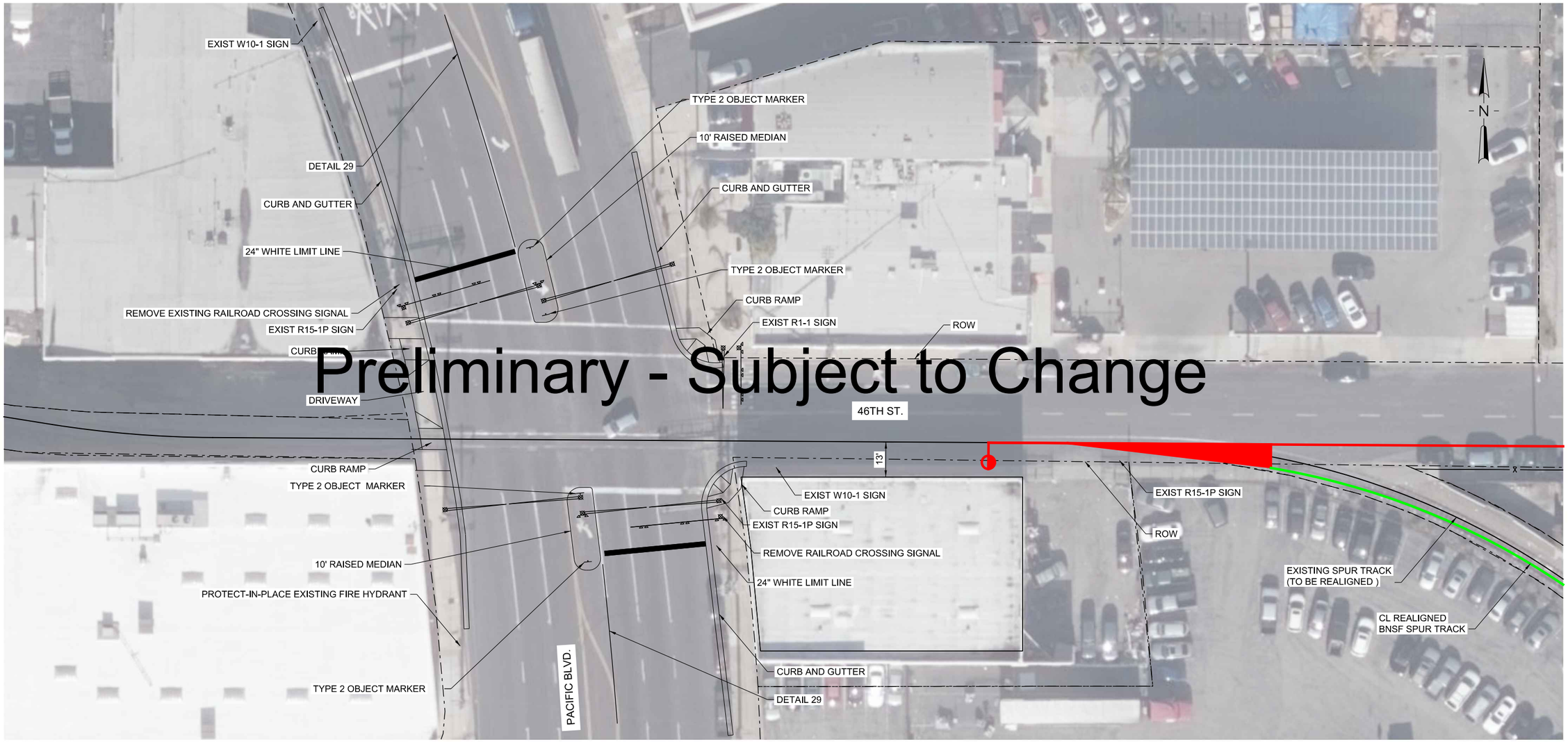
REMOVAL NOTES:

1. REMOVE EXISTING CONFLICTING AC PAVEMENT, CURB & GUTTER, SIDEWALK, AND ACCESS RAMP.
2. WET SANDBLAST AND REMOVE EXISTING CONFLICTING STRIPES AND/OR PAVEMENT MARKINGS.
3. REMOVE EXISTING CONFLICTING ROAD SIGN AND/OR POST.

CONSTRUCTION NOTES:

1. OFFSET REQUIREMENTS FOR RELOCATION OF SIGNS, POLES, ANCHORS, OR FIRE HYDRANTS PER CITY OF VERNON STANDARD PV 2133.
2. CONSTRUCT CURB & GUTTER, CURB RAISED MEDIAN AND SIDEWALK PER CITY OF VERNON STANDARD PV 582.
3. CONSTRUCT CURB RAMP PER CALTRANS STANDARD PLANS.
4. INSTALL PAVEMENT STRIPES, MARKINGS, AND ROAD SIDE SIGNS PER CA MUTCD STANDARD DETAILS.

SIGNAGE REFERENCES



Preliminary - Subject to Change

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SERIES RD02 OF RD03

PLOT DATE: 6/30/2020 4:56:43 PM WSTEBOK

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CHECKED:	HDR-EC
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LINE SEG:	7604/7665

BNSF RAILWAY - HARBOR AND SAN BERNARDINO SUBDIVISION - BETWEEN TRACKS 7604-2750 AND 7665-1010

PACIFIC BLVD AND 46TH STREET GRADE CROSSING

FILENAME	LAJ-C-RD02.dgn	SHEET	14 OF 19
SCALE	(FULL-SIZE) - AS NOTED		

NOTES:

1. SEE TRACK PLAN FOR RAILROAD TRACK ALIGNMENT, SIGNALIZATION, AND GATE DETAILS.

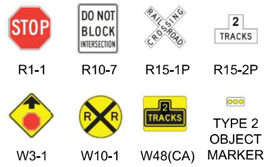
REMOVAL NOTES:

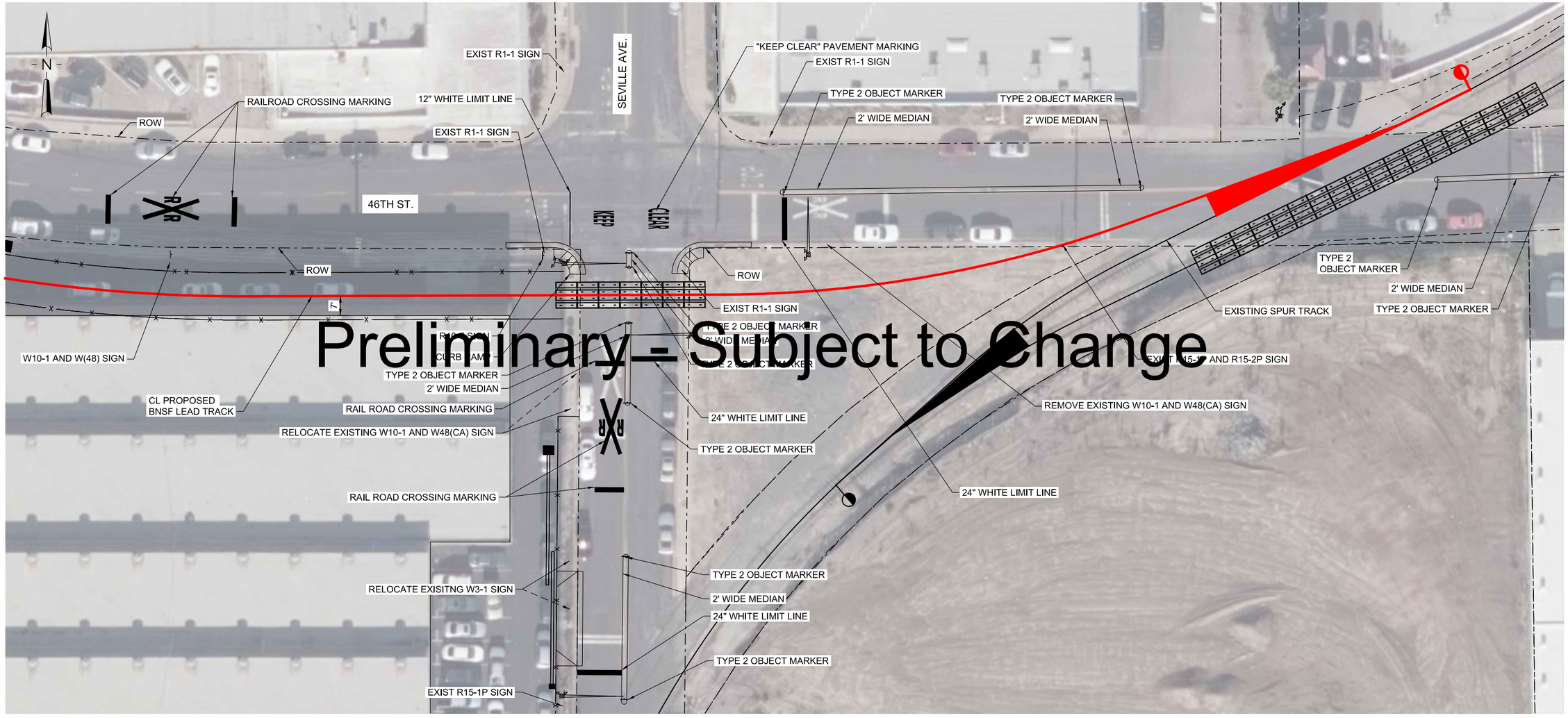
1. REMOVE EXISTING CONFLICTING AC PAVEMENT, CURB & GUTTER, SIDEWALK, AND ACCESS RAMP.
2. WET SANDBLAST AND REMOVE EXISTING CONFLICTING STRIPES AND/OR PAVEMENT MARKINGS.
3. REMOVE EXISTING CONFLICTING ROAD SIGN AND/OR POST.

CONSTRUCTION NOTES:

1. OFFSET REQUIREMENTS FOR RELOCATION OF SIGNS, POLES, ANCHORS, OR FIRE HYDRANTS TO BE PER CITY OF VERNON STANDARD PV 2133.
2. CONSTRUCT CURB & GUTTER, CURB RAISED MEDIAN AND SIDEWALK PER CITY OF VERNON STANDARD PV 582.
3. CONSTRUCT CURB RAMP PER CALTRANS STANDARD PLANS.
4. INSTALL PAVEMENT STRIPES, MARKINGS, AND ROAD SIDE SIGNS PER CA MUTCD STANDARD DETAILS.

SIGNAGE REFERENCES





Preliminary – Subject to Change

20 10 0 20 40
SCALE: 1" = 20'

NOT FOR CONSTRUCTION

SERIES RD03 OF RD03

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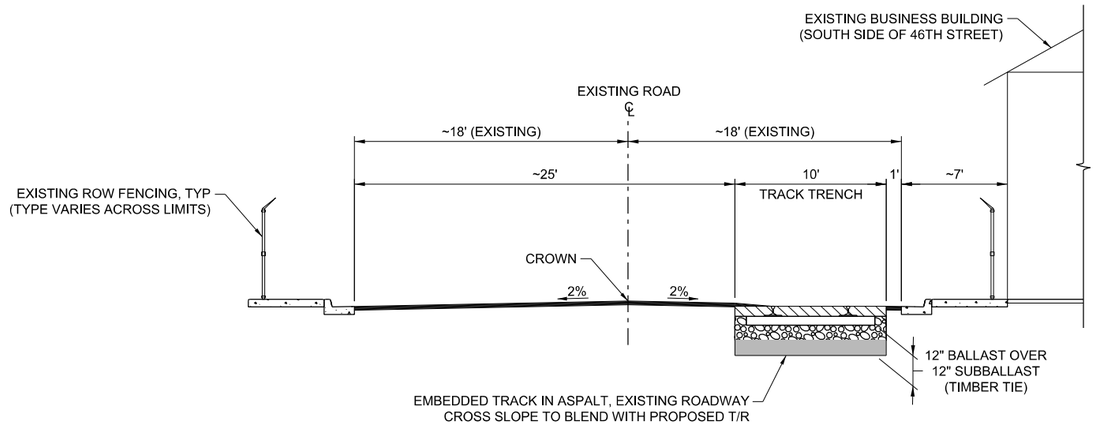
LINE SEG:	7604/7665

BNSF RAILWAY - HARBOR AND SAN BERNARDINO
SUBDIVISION - BETWEEN TRACKS 7604-2750 AND 7665-1010

SEVILLE AVENUE AND 46TH STREET GRADE CROSSING

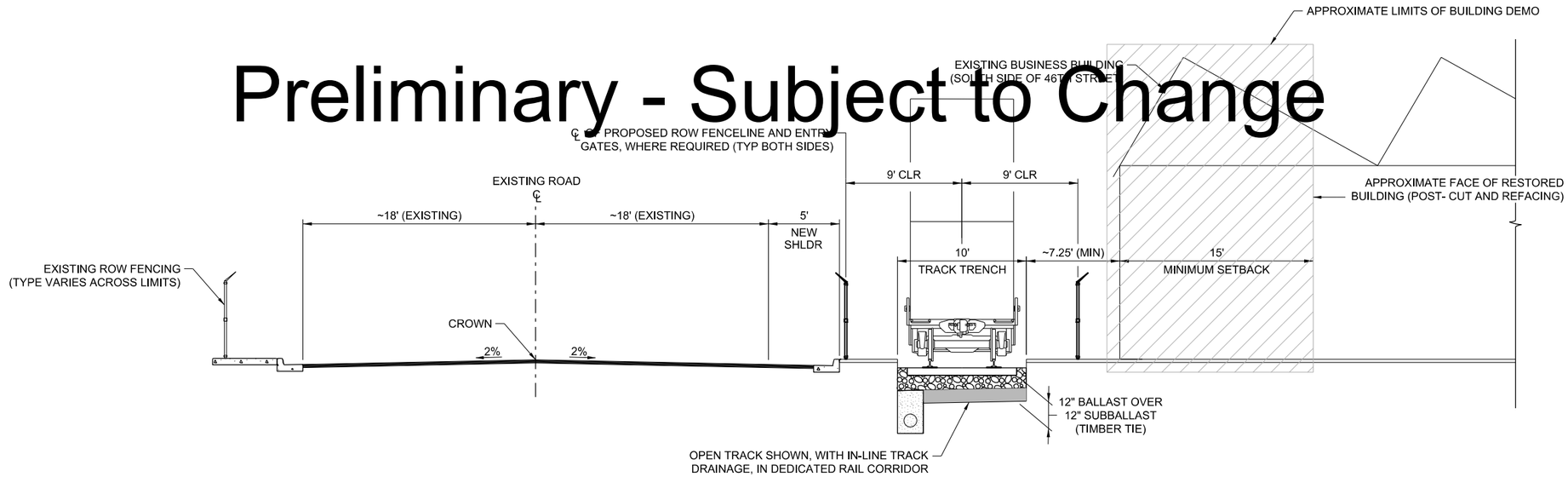
FILENAME	LAJ-C-RD03.dgn
SCALE	(FULL-SIZE) - AS NOTED
SHEET	15 OF 19

PLOT DATE: 6/30/2020 4:57:20 PM WSTEBOK



TYPICAL SECTION - ASPHALT EMBEDDED TRACK (RIGHT) — AA P01

NOT TO SCALE
(VIEW LOOKING EAST)



TYPICAL SECTION - OPEN TRACK
OUTSIDE OF ROADWAY SECTION — BB P01

NOT TO SCALE
(VIEW LOOKING EAST)

Preliminary - Subject to Change

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SERIES TS01 OF TS02

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CHECKED:	HDR-JR
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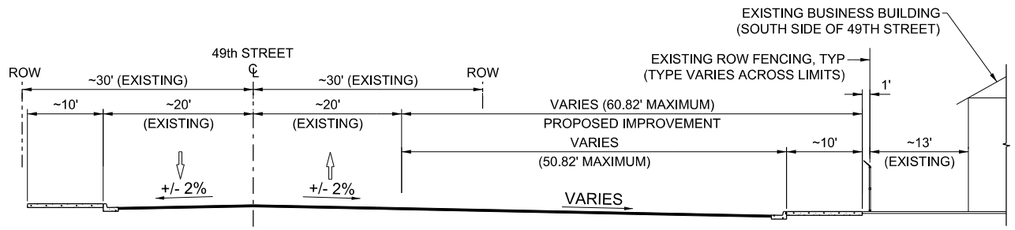
BNSF RAILWAY - HARBOR AND SAN BERNARDINO
SUBDIVISION - BETWEEN TRACKS 7604-2750 AND 7665-1010

RAIL TYPICAL SECTIONS

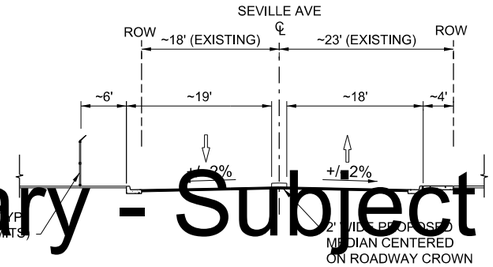
FILENAME	16542_MALA-R-TS01.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 16 OF 19



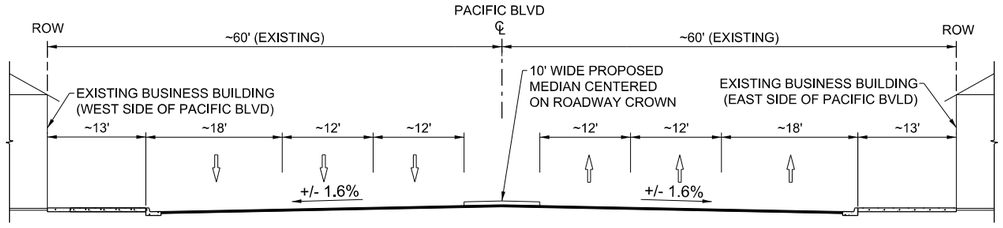
TYPICAL SECTION - 49TH ST (EE / RD01)

NOT TO SCALE
(VIEW LOOKING EAST)



TYPICAL SECTION - SEVILLE AVE (DD / P02)

NOT TO SCALE
(VIEW LOOKING NORTH)



TYPICAL SECTION - PACIFIC BLVD (CC / P02)

NOT TO SCALE
(VIEW LOOKING NORTH)

Preliminary - Subject to Change

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LINE SEG:	7604/7665

BNSF RAILWAY - HARBOR AND SAN BERNARDINO
SUBDIVISION - BETWEEN TRACKS 7604-2750 AND 7665-1010

CIVIL TYPICAL SECTIONS

FILENAME	16542_MALA-C-TS02.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 17 OF 19

CONSTRUCTION NOTES

1. INSTALL PAVEMENT STRIPES, MARKINGS, AND ROAD SIDE SIGNS PER CA MUTCD STANDARD DETAILS.

REMOVAL NOTES

1. WET SANDBLAST AND REMOVE EXISTING CONFLICTING STRIPES AND/OR PAVEMENT MARKINGS.
2. REMOVE EXISTING CONFLICTING ROAD SIGN AND/OR POST.

SIGNAGE REFERENCES

Preliminary - Subject to Change

50 25 0 50 100
SCALE: 1" = 50'

NOT FOR CONSTRUCTION

SERIES SS01 OF SS02

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DRAWN:	HDR-IS
CHECKED:	HDR-EC
DATE:	JUNE 30, 2020
AUTH:	
LINE SEG:	7604/7665

BNSF RAILWAY - HARBOR AND SAN BERNARDINO
SUBDIVISION - BETWEEN TRACKS 7604-2750 AND 7665-1010

BNSF LAJ CONNECTOR STRIPING AND SIGNAGE

FILENAME	LAJ-C-SS01.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 18 OF 19

CONSTRUCTION NOTES

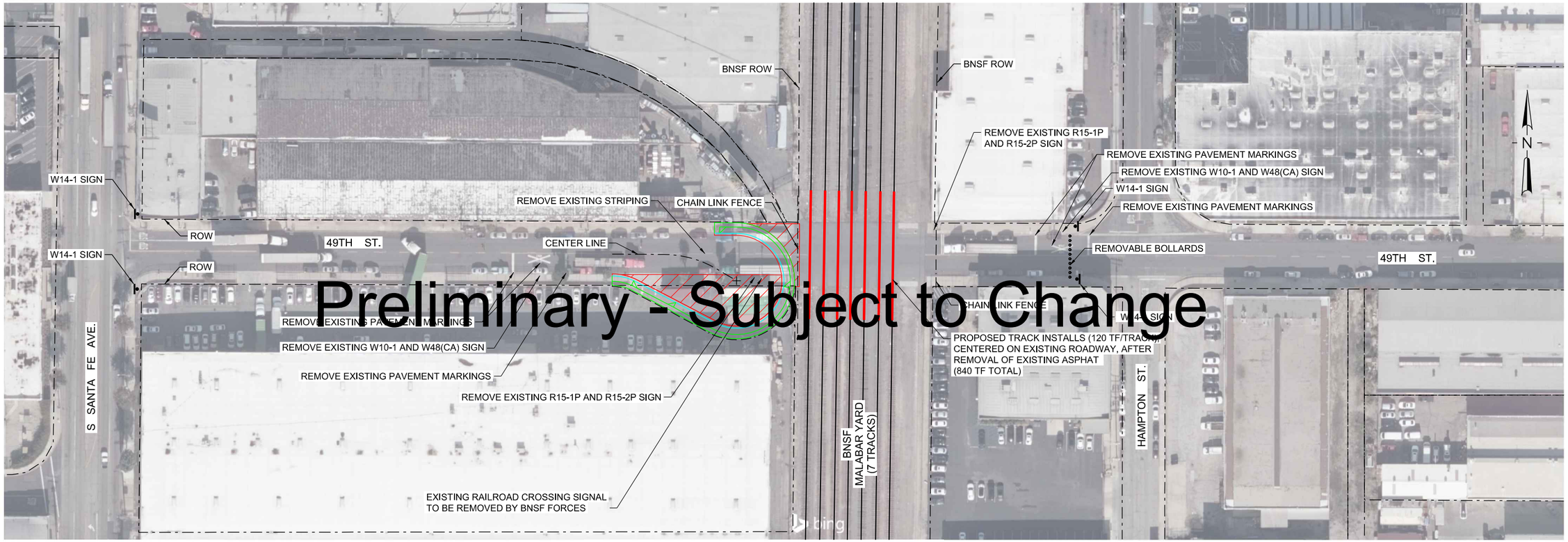
1. INSTALL PAVEMENT STRIPES, MARKINGS, AND ROAD SIDE SIGNS PER CA MUTCD STANDARD DETAILS.

REMOVAL NOTES

1. WET SANDBLAST AND REMOVE EXISTING CONFLICTING STRIPES AND/OR PAVEMENT MARKINGS.
2. REMOVE EXISTING CONFLICTING ROAD SIGN AND/OR POST.

SIGNAGE REFERENCES

R15-1P R15-2P W10-1 W14-1 W48(CA)



Preliminary - Subject to Change

50 25 0 50 100
SCALE: 1" = 50'

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SERIES SS02 OF SS02

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DATE:	JUNE 30, 2020
AUTH:	
LINE SEG:	7604/7665

BNSF RAILWAY - HARBOR AND SAN BERNARDINO
SUBDIVISION - BETWEEN TRACKS 7604-2750 AND 7665-1010

MALABAR YARD/49TH ST CLOSURE STRIPING AND SIGNAGE

FILENAME	MALA-C-SS02.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 19 OF 19

PLOT DATE: 6/30/2020 4:58:45 PM WSTEBOK

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Appendix B. Engineering Plans (Design Option 2 for 49th Street Closure and 46th Street Connector)

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LINE SEGMENT 7604/7665

MALABAR YARD / 49TH STREET CLOSURE AND LAJ CONNECTOR BETWEEN TRACKS 7604-2750 AND 7665-1010 (REFERENCE LOCATION: MP1.3, HARBOR SUB)

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PROJECT LOCATION
NOT TO SCALE

LOS ANGELES, CA

PROJECT AREA
NOT TO SCALE

10% CONCEPTUAL RESUBMITAL
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COVER SHEET

FILENAME	16542-MALA-G-GN01.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 1 OF 19

1	GN01	COVER SHEET
2	GN02	INDEX OF DRAWINGS
3	GN03	GENERAL NOTES AND ABBREVIATIONS
4	GN04	LEGEND CURVE DIAGRAMS
5	ROW01	LAJ CONNECTOR/46TH STREET, RIGHT-OF-WAY IMPACTS
6	ROW02	MALABAR YARD/49TH STREET CLOSURE, RIGHT-OF-WAY IMPACTS
7	UT01	LAJ CONNECTOR/46TH STREET, EXISTING UTILITIES
8	UT02	MALABAR YARD/49TH STREET CLOSURE, EXISTING UTILITIES
9	SD01	LAJ CONNECTOR/46TH STREET, EXISTING/PROPOSED DRAINAGE
10	SD02	MALABAR YARD/49TH STREET CLOSURE, EXISTING/PROPOSED DRAINAGE
11	P01	TRACK PLAN
12	P02	CIVIL PLAN
13	RD01	MALABAR YARD/49TH STREET CLOSURE, GRADE CROSSING
14	RD02	PACIFIC BLVD AND 46TH STREET, GRADE CROSSING
15	RD03	SEVILLE AVE AND 46TH STREET, GRADE CROSSING
16	TS01	RAIL TYPICAL SECTIONS
17	TS02	CIVIL TYPICAL SECTIONS
18	SS01	LAJ CONNECTOR/46TH STREET, STRIPING AND SIGNAGE
19	SS02	MALABAR YARD/49TH STREET CLOSURE, STRIPING AND SIGNAGE

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BNSF RAILWAY

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DRAWN:	HDR-WS
CHECKED:	HDR-BR
DATE:	FEBRUARY 26, 2021
AUTH:	
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INDEX OF DRAWINGS

FILENAME	16542-MALA-G-GN02.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 2 OF 19

PLOT DATE: 2/26/2021 5:15:13 PM WSTEBOK

GENERAL NOTES

1. CONTRACTOR SHALL COMPLY WITH ALL THE LOCAL, STATE AND FEDERAL SAFETY CODES AND REGULATIONS AND THE SPECIFICATIONS FOR THIS CONTRACT.
2. ALL CONSTRUCTION ACTIVITIES SHALL BE SCHEDULED AND COORDINATED THROUGH THE ENGINEER, INCLUDING THE VARIOUS COMPANIES, AGENCIES AND OTHER CONTRACTORS WHO MAY BE AFFECTED BY THIS WORK. ALL REQUIRED PERMITS NEEDED FOR THE WORK SHALL BE OBTAINED BY THE CONTRACTOR UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL COMPLY WITH ALL RAILROAD OCCUPANCY REQUIREMENTS INCLUDING INSURANCE REQUIREMENTS AND USE OF AND PAYMENT OF RAILROAD FLAGMEN.
3. HORIZONTAL AND VERTICAL CONTROL POINTS FOR THE TRACK LAYOUT ARE IDENTIFIED IN THE CONTRACT DOCUMENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THESE CONTROL POINTS TO ASSURE THAT ALL FACILITIES INCLUDED IN THIS PROJECT ARE CONSTRUCTED AT THE CORRECT VERTICAL AND HORIZONTAL LOCATIONS.
4. BNSF RAILWAY WILL CONSTRUCT ALL TRACKWORK OF BNSF OWNED TRACKS ONLY. TRACKWORK DONE BY BNSF WILL INCLUDE ALL MATERIAL ABOVE TOP OF SUBBALLAST. THE CONTRACTOR IS RESPONSIBLE FOR ALL GRADING INCLUDING THE TOP OF SUBBALLAST. GRADING WORK CONSISTS OF SUBGRADE PREPARATION AND PLACEMENT OF SUBBALLAST TO GRADES INDICATED ON THE PLANS, AND TO COMPACTION SPECIFIED IN THE SPECIFICATIONS.
5. POSITIVE DRAINAGE MUST BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION TO PREVENT PONDING OF WATER.
6. THE CONTRACTOR SHALL COMPLY WITH THE STATE OF CALIFORNIA NPDES PERMIT REGARDING THE TREATMENT OF WATER BEFORE DISCHARGING OFF OF BNSF R/W.
7. CONTRACTOR SHALL SUBMIT A PHASING PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. ANY MODIFICATIONS TO THIS PHASING PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
8. LIMITS OF GRADING AS SHOWN ON THE PLANS ARE APPROXIMATE. WHERE LIMIT OF GRADING IS ADJACENT TO A BRIDGE, CROSSING, OR OTHER FACILITY, GRADING SHALL PROVIDE FOR A CONTINUOUS GRADE SO THAT THE RAILROAD CAN SUBSEQUENTLY LAY TRACK WITH NO ADDITIONAL WORK.
9. A NATIONAL ONE CALL IDENTIFICATION NUMBER MUST BE ISSUED BEFORE A "PERMIT TO EXCAVATE" IS VALID. THE CONTRACTOR SHALL CALL THE NATIONAL ONE CALL (811 (CALIFORNIA) OR 1-800-227-2600 (NATIONAL)) TWO WORKING DAYS PRIOR TO CONSTRUCTION TO OBTAIN A CALIFORNIA ONE CALL ID NUMBER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE FIBER OPTIC LINES. BNSF CALL BEFORE YOU DIG 1-800-422-4133.
10. THE CONTRACTOR SHALL BECOME FAMILIAR WITH LEGISLATION OUTLINING PROCEDURES FOR LOCATING UTILITIES BY HAND EXCAVATIONS AND COMPLY WITH ITS DIRECTIVE.
11. PRIOR TO EACH CONSTRUCTION ACTIVITY WITHIN BNSF RIGHT-OF-WAY, THE CONTRACTOR SHALL NOTIFY BNSF'S SIGNAL REPRESENTATIVE.
12. THE CONTRACTOR SHALL PROTECT ALL BNSF SIGNAL FACILITIES IN PLACE.
13. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS FOR CONFLICTS WITH EXISTING UTILITIES, SIGNAL CABLES/EQUIPMENT AND/OR OTHER ITEMS THAT MIGHT IMPAIR CONSTRUCTION ACTIVITIES. INCONSISTENCIES FOUND SHALL BE REPORTED TO THE ENGINEER.
14. REPAIRS TO FACILITIES INTENDED TO REMAIN IN PLACE SHALL BE MADE BY THE CONTRACTOR AT THE CONTRACTORS EXPENSE UNLESS OTHERWISE STATED BY THE ENGINEER.
15. ALL EXCAVATED WASTE MATERIAL FROM WITHIN BNSF ROW SHALL BE WASTED ONSITE AT LOCATIONS APPROVED BY THE ENGINEER.
16. ON-SITE CONSTRUCTION BY OTHERS, INCLUDING ROUTINE MAINTENANCE WORK, (BNSF FORCES, BNSF SIGNAL CONTRACTOR, FIBER OPTIC, UTILITIES, ETC.) MAY OCCUR DURING THE CONSTRUCTION PERIOD OF THIS CONTRACT. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES THROUGH THE ENGINEER SO AS TO MINIMIZE INTERFERENCE WITH OTHERS.
17. PRIOR TO COMMENCING WORK, ALL EXISTING SITE CONDITIONS SHALL BE FIELD VERIFIED WITH THE ENGINEER TO ASCERTAIN THE LIMITS OF WORK ACTIVITIES. THE CONTRACTOR SHALL SUBMIT AND RECEIVE THE ENGINEERS APPROVAL OF THE CONTRACTORS PROJECT SCHEDULE AND OPERATIONS PLAN. EACH ITEM OF WORK SHALL BE DESCRIBED AND ACCOUNTED FOR IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL REFER TO THE SPECIFICATIONS FOR FURTHER INFORMATION REGARDING SUBMITTAL REQUIREMENTS.
18. RAIL TRAFFIC DISRUPTIONS SHALL BE KEPT TO A MINIMUM. DISRUPTIONS IN RAIL TRAFFIC THAT MAY BE REQUIRED SHALL BE COORDINATED WITH THE ENGINEER BEFOREHAND. NO SUCH WORK SHALL BE COMMENCED WITHOUT THE ENGINEERS APPROVAL.
19. THE CONTRACTOR SHALL NOT PLACE MATERIAL AND/OR EQUIPMENT WITHIN 25 FEET OF AN ACTIVE TRACK AT ANY TIME WITHOUT PRIOR APPROVAL OF THE ENGINEER.
20. EXISTING RAILROAD SIGNAGE (INCLUDING SPEED SIGNS) SHALL BE MAINTAINED DURING THE CONSTRUCTION PERIOD. ALL RAILROAD SIGNAGE SHALL BE FULLY RESTORED UPON COMPLETION OF EACH DAYS WORK IN ACCORDANCE WITH BNSF ENGINEERING STANDARDS. PRIOR TO CONSTRUCTION, BNSF STANDARD PROJECT NOTICE SIGNS SHALL BE PLACED AT LOCATIONS AS DIRECTED BY THE ENGINEER. NO TRESPASSING SIGNS SHALL BE PLACED IN ACCORDANCE WITH BNSF STD DWG 3068 AND AS SHOWN ON THE DRAWINGS.
21. ALL WORK SHALL BE COORDINATED WITH BNSF'S SIGNAL ENGINEER, SIGNAL FORCES AND SIGNAL CONTRACTOR THRU THE ENGINEER, SIGN RELOCATIONS SHALL BE PERFORMED BY BNSF FORCES OR WITH APPROVAL FROM BNSF. WORK WILL BE PHASED TO NOT EFFECT THE CONTINUED OPERATION OF EXISTING SIGNAL SYSTEM DURING CONSTRUCTION. IN NO INSTANCE MAY WORK PROCEED IN ANY AREA WITHOUT ADVANCE APPROVAL OF BNSF'S SIGNAL ENGINEER. THE CONTRACTOR SHALL LOCATE ALL SIGNAL AND COMMUNICATION CONDUITS, CABLES, WIRES, OR OTHER TRACK, TRACK BED, AND RIGHT-OF-WAY.
22. CONSTRUCT WALKWAYS AND MAINTENANCE ROADS PER BNSF STANDARDS.
23. DIMENSIONS SHOWN IN PARENTHESES INDICATE APPROXIMATE EXISTING DIMENSIONS. WHERE ELEVATIONS ARE SHOWN IN PARENTHESES AT JOIN LOCATIONS, THE CONTRACTOR SHALL VERIFY THESE ELEVATIONS PRIOR TO CONSTRUCTION AND JOIN FEATURES AT EXISTING ELEVATIONS.
24. ALL EXISTING FENCES ALONG THE RIGHT-OF-WAY SHALL BE PROTECTED IN PLACE, UNLESS OTHERWISE NOTED, AT THE OPTION OF THE CONTRACTOR, FENCING MAY BE REMOVED TO FACILITATE CONSTRUCTION, HOWEVER FENCING MUST BE REPLACED, IN KIND, AND THE CONSTRUCTION SITE MUST REMAIN SECURE AT ALL TIMES.

DEFINITIONS:

A. TRACK OUTAGE: TRACK WHICH IS OUT OF SERVICE FOR A GIVEN PERIOD OF TIME
B. ACTIVE TRACK: TRACK ON WHICH TRAINS ARE OPERATING AND INTERRUPTION OF SERVICE MAY OCCUR ONLY WITHIN AN APPROVED "WINDOW" AS DEFINED BELOW.
C. FOULED TRACK: TRACK FOULED WHEN AN OBSTRUCTION INCLUDING A WORKING CREW IS WITHIN 25 FEET FROM THE CENTERLINE OF THE TRACK OR WHEN AN OVERHEAD OBSTRUCTION IS PLACED WITHIN 22'-6" ABOVE THE TOP OF RAIL. WORK MAY BE PERFORMED UNDER THE PROTECTION OF A RAILROAD .
D. WINDOW: A GIVEN PERIOD OF TIME BETWEEN OPERATING TRAINS WHERE A TRACK MAY BE TAKEN OUT OF SERVICE, WITH THE STIPULATION THAT THE TRACK SHALL BE BACK IN SERVICE AT THE END OF THE GIVEN PERIOD OF TIME.

ABBREVIATIONS

&	AND
@	AT
°	DEGREES
'	FOOT OR FEET OR MINUTE(S)
"	INCH OR INCHES OR SECOND(S)%PERCENT
#	POUND OR NUMBER
Δ	CENTRAL ANGLE OF CIRCULAR CURVE
AC	ASPHALT CONCRETE
ACQ	AQUISITION
AP	ANGLE POINT
APE	AREA OF POTENTIAL EFFECT
APPROX	APPROXIMATELY
APWA	AMERICAN PUBLIC WORKS ASSOCIATION
AVE	AVENUE
BC	BEGINNING OF CURVE
BLVD	BOULEVARD
BNSF	BNSF RAILWAY COMPANY
BM	BENCHMARK
BR	BRIDGE
BXC	CONCRETE BOX
CAPS	CORRUGATED ARCH PIPE - STEEL
CB	CATCH BASIN
CC	CENTER OF CURVE
CIP	CAST IRON PIPE OR CAST IN PLACE
C/L	CENTERLINE
CONC	CONCRETE
CMP	CORRUGATED METAL PIPE
CP	CONCRETE PIPE
CPUC	CALIFORNIA PUBLIC UTILITIES COMMISSION
CPS	CORRUGATED PIPE - STEEL
CORR	CORRUGATED
CS	CURVE TO SPIRAL
CT	CONCRETE TIES
DC	DEGREE OF CURVE
DEMO	DEMOLISH
DESC	DESCRIPTION
DI	DUCTILE IRON
DIP	DUCTILE IRON PIPE
DOT	DEPARTMENT OF TRANSPORTATION
DR	DRIVE
DU	DUCT
DWG	DRAWING
E	EAST OR EASTERLY OR EASTING
Ea	SUPERELEVATION, ACTUAL
EC	END OF CURVE OR EDGE OF CONCRETE
EGL	ENERGY GRADE LINE
ELEC	ELECTRICAL
EL	ELEVATION
ELEV	ELEVATION
EQ	EQUAL OR EQUATION
EPC	ELLIPTICAL PIPE - CONCRETE
EW	EACH WAY
Eu	SUPERELEVATION, UNBALANCED
EX	EXISTING
EXIST	EXISTING
F	FREIGHT
FH	FIRE HYDRANT
FL	FLOWLINE
F.O.	FIBER OPTIC
FS	FINISHED SURFACE
FT	FOOT OR FEET
G	GRADE
G1	GRADE ENTERING VERTICAL CURVE
G2	GRADE EXITING VERTICAL CURVE
GA	GAGE
GB	GRADE BREAK
GM	GAS METER
GRD	GROUND
GV	GAS VALVE
HGL	HYDRAULIC GRADE LINE
HORIZ	HORIZONTAL
HP	HIGH POINT OR HIGH PRESSURE
IND	INDUSTRY SPUR
INV	INVERT
L	LENGTH
LACFCD	LA COUNTY FLOOD CONTROL DISTRICT
LC	LENGTH OF CURVE (CIRCULAR)
LF	LINEAR FOOT OR LINEAR FEET
LS	LENGTH OF SPIRAL
LT	LEFT
MAX	MAXIMUM
MH	MANHOLE
MN	MINIMUM
MP	MILEPOST OR MEDIUM PRESSURE
MT	MAIN TRACK
MT1	MAIN TRACK 1
MT2	MAIN TRACK 2
MT3	MAIN TRACK 3
MTD	MULTIPLE TILE DUCTN
NO	NUMBER OR NORTHERN
NTS	NOT TO SCALE
OD	OUTSIDE DIAMETER
OHWM	ORDINARY HIGH WATER MARK
OH	OVERHEAD
OTM	OTHER TRACK MATERIALS
O. TO O.	OUT TO OUT
P	PASSENGER
PSGR	PASSENGER
PB	PULLBOX
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PCC	PORTLAND CEMENT CONCRETE
PI	POINT OF INTERSECTION
PIP	PROTECT IN PLACE
PITO	POINT OF INTERSECTION OF TURNOUT
POB	POINT OF BEGINNING
POC	POINT OF CONNECTION
POE	POINT OF ENDING
POT	POINT OF TANGENT
PRC	POINT OF REVERSING CURVATURE
PROP OR PR.	PROPOSED
P.S. OR PS	POINT OF SWITCH
PS	STEEL PIPE (SMOOTH WALL)
PSAP	STRUCTURAL STEEL ARCH PLATE PIPE
PT	POINT OF TANGENT
PVC	POINT OF VERTICAL CURVE OR POLYVINYL CHLORIDE (PIPE)
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENT
R	RADIUS OR RATE OF CHANGE
R/W OR ROW	RIGHT-OF-WAY
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RH	RIGHT HAND
RPM	RAISED PAVEMENT MARKER
RR	RAILROAD
RT	RIGHT
S	SOUTH OR SOUTHERLY OR SLOPE
SC	SPIRAL TO CURVE
SCG	SOCAL GAS
SDG	SIDING
SDMH	STORM DRAIN MANHOLE
SF	SQUARE FOOT OR SQUARE FEET
SO	SOUTHERN
SMH	SEWER MANHOLE
SSMH	SEWER MANHOLE
SSP	SMOOTH STEEL PIPE
STA	STATION
STD	STANDARD
ST	STREET OR SPIRAL TO TANGENT
SUB	SUBDIVISION
T	TANGENT
TC	TRACK CENTER(S) OR TOP OF CURB
TG	TOP OF GRATE
TGC	THE GAS COMPANY
T.O. OR TO	TURNOUT
T/R TO TOR	TOP OF RAIL
TF	TRACK FOOT OR TRACK FEET
TRK	TRACK
TS	TANGENT TO SPIRAL
TT	TIMBER TRANSITION TIES
TYP	TYPICAL
UD	UNDERDRAIN
UP	UNDERPASS
UPRR	UNION PACIFIC RAILROAD
V	VELOCITY
VAR	VARIES
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
W	WEST OR WESTERLY
WM	WATER METER
WV	WATER VALVE
XING	CROSSING
XO	CROSSOVER

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SERIES GN03 OF GN04

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LINE SEG:	7604/7665

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GENERAL NOTES AND ABBREVIATIONS

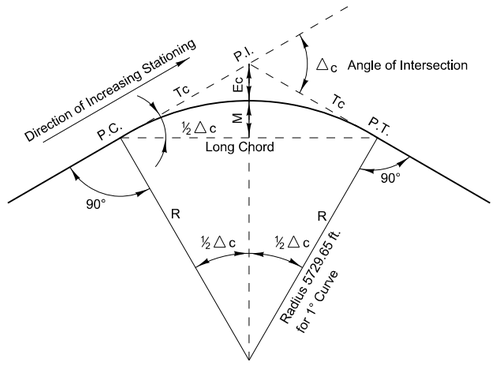
FILENAME	16542-MALA-G-GN03.dgn	SHEET	3 OF 19
SCALE	(FULL-SIZE) - AS NOTED		

REMOVE TRACK

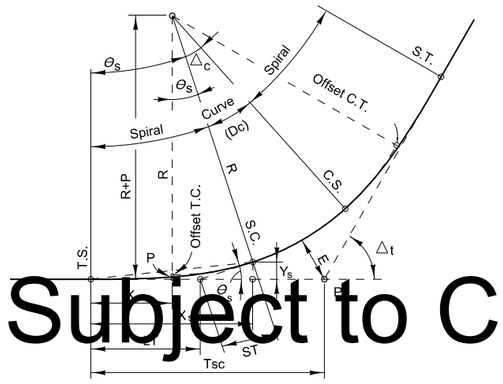
LEGEND

- REMOVE TRACK
- SHIFT TRACK
- REALIGNED TRACK
- UPGRADE TRACK
- EXISTING TRACK
- EXISTING INDUSTRY TRACK
- COUNTY LINE
- PROPERTY LINE
- PROPOSED TRACK
- EXISTING R.O.W.
- PROPOSED R.O.W.
- LIMITS OF GRADING
- FUTURE TRACK
- 1' CONTOUR LINE
- 5' CONTOUR LINE (- 2200 -)
- 1' PROPOSED CONTOUR LINE
- 5' PROPOSED CONTOUR LINE (5465')
- PROPOSED ACCESS ROAD (ACCESS ROAD)
- EXISTING CHAIN LINK FENCE
- EXISTING BARBED WIRE FENCE (X)
- EXISTING BARBED WIRE FENCE
- PROPOSED SILT FENCE (SF)
- TURNOUT NUMBER (TO-1)
- DITCH (8' DITCH)
- GAME FENCE (GF)
- FLOW DIRECTION
- FUEL OR OIL LINES (-/-10"-/-)
- GAS LINE (10")
- TOXIC CHEMICAL LINES (6" TOX.CHEM.)
- TOXIC GAS LINES (6" TOX.GAS)
- AIR LINES (4")
- CABLE TV LINES (CATV)
- OVERHEAD POWER LINES (OH — E)
- ELECTRIC LINES (E)
- HIGH VOLTAGE ELEC. LINES (E)
- SEWER LINES
- STEAM LINES (15")
- STORM LINES (ST)
- TELEPHONE LINES (T)
- WATER LINES (W)
- CUT LINES
- FILL LINES
- FIBER OPTIC LINE (FO)
- EXISTING ACCESS ROAD (ACCESS ROAD)

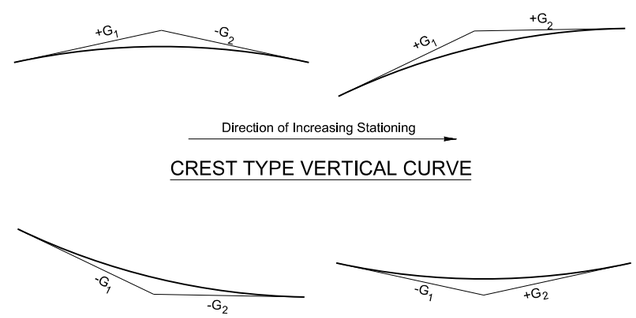
- REMOVE EXISTING RAILROAD TURNOUT
- SHIFT EXISTING RAILROAD TURNOUT
- RAILROAD TURNOUT (ELECTRIC LOCK)
- RAILROAD TURNOUT (HAND THROW)
- RAILROAD TURNOUT (POWER SWITCH)
- EXISTING POWER POLE W/ GUY WIRE
- EXISTING RAILROAD SIGNAL
- PROPOSED RAILROAD SIGNAL
- EXISTING RAILROAD SIGNAL CABINET
- PROPOSED RAILROAD SIGNAL CABINET
- TRACK DETECTOR
- HOT BOX DETECTOR
- CULVERT
- MILEPOST (MP 426.0)
- SIGN
- RR CROSSING GATE
- GRADE CROSSING PANEL
- GAS VALVE (G)
- TELEPHONE RISER
- STORM DRAIN MANHOLE
- SANITARY SEWER MANHOLE
- STAND PIPE
- UTILITY POLE
- GUY ANCHOR
- LUMINAIRE
- POWER VAULT
- TELEPHONE VAULT
- FIBER OPTIC WARNING SIGN (FO)
- FIBER OPTIC VAULT (FO)
- WATER METER BOX
- CONTROL POINT SYMBOL (225)
- BORING SYMBOL (B-4)
- TEST PIT SYMBOL (TP501)
- GATE
- CATTLE GUARD
- WILDLIFE RAMP
- CULTURAL RESOURCES AREA (PROTECT IN PLACE)



CURVE

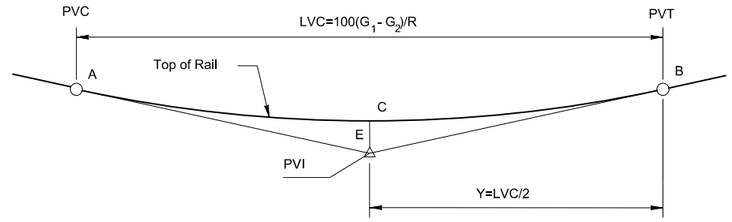


SPIRAL - CURVE - SPIRAL



CREST TYPE VERTICAL CURVE

SAG TYPE VERTICAL CURVE



R = Rate of Change in Grade per 100 ft Station = V/L
G_1, G_2 = Gradient Expressed as Feet Per 100 ft Station
LVC = Length of Vertical Curve in Feet.
E = Vertical Distance Between PVI and Vertical Curve.
ML Crest R = 0.10
ML Sag R = 0.05

HORIZONTAL CURVE FORMULA

Using Chord Definition Curve With Spirals

- $\triangle t$ = Total Angle
- Θs = Spiral Angle = Ls Dc / 200
- $\triangle c$ = Circular Curve Angle
- $\triangle t$ = Total Curve Angle (Spiral + Curve + Spiral)
- Dc = Degree of Circular Curve = $100 \frac{\triangle c}{L}$, also sin (1/2 Dc) = $\frac{50}{R}$
- Ls = Length of Spiral Curve
- Lc = Length of Circular Curve = $100 \frac{\triangle c}{Dc}$
- LC = Long Chord of Circular Curve = 2R sin (1/2△c)
- M = Middle Ordinate of Circular Curve = R(1 - cos (1/2△c))

VERTICAL CURVE GEOMETRY

- R = Radius of Circular Curve = 50 / (sin (Dc/2))
- Tc = Tangent of Circular Curve = R tan (1/2△c)
- Tsc = Total Tangent Length (SPIRAL - CURVE - SPIRAL)
- LT = Long Tangent of Spiral Curve
- ST = Short Tangent of Spiral Curve
- K, P = Coordinates of Offset Point Referred to Total Tangent as X-Axis and TS as Origin
- Xs Ys = Coordinates of S.C. Point Referred to Total Tangent as X-Axis and TS as Origin
- E = External Distance from Circular Curve to Point of Intersection for Total Curve

HORIZONTAL CURVE DEFINITIONS

NOT FOR CONSTRUCTION

SERIES GN04 OF GN04

Preliminary - Subject to Change

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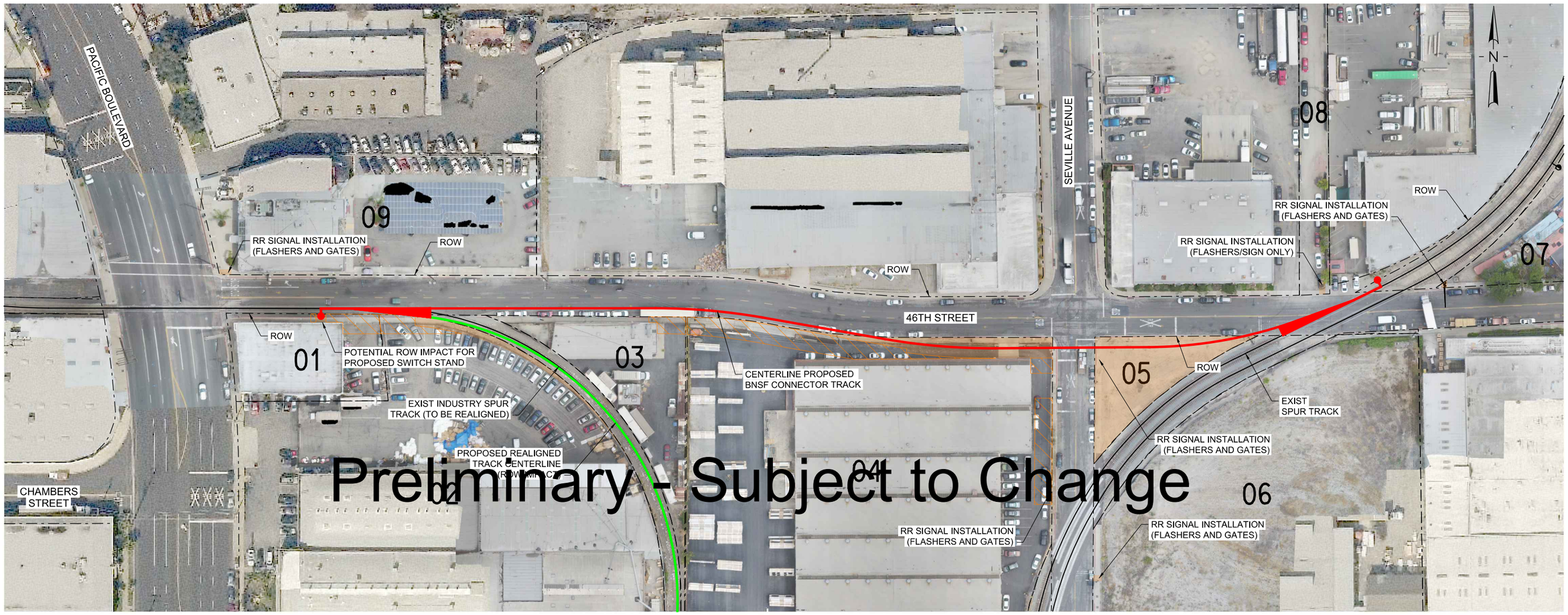
LEGEND AND CURVE DIAGRAMS

FILENAME	16542-MALA-G-GN04.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 4 OF 19



LEGEND:

- ESTIMATED PROPERTY IMPACTS (OUTSIDE OF BNSF ROW)
- TCE
- XX PARCEL DESIGNATION
- — - — - RIGHT OF WAY / PROPERTY LINE

POTENTIAL RIGHT-OF-WAY IMPACTS (ESTIMATED)

ID	AIN	OWNER	ACQ AREA (SF)	DESCRIPTION
01	6308-004-011	JONES, JEREMY	85	PARTIAL ACQ NEEDED FOR SWITCH STAND AND TRACK REALIGNMENT; TEMP ACCESS DISRUPTION DURING CONSTRUCTION
			880	TCE
02	6308-004-012	GUERRA, JOSE & LIDIA	1,335	PARTIAL ACQ NEEDED FOR TRACK REALIGNMENT; TEMP ACCESS DISRUPTION DURING CONSTRUCTION
			870	TCE
03	6308-004-012	GUERRA, JOSE & LIDIA	520	TCE
04	6308-004-013	ALPINE LEONIS LLC	3,415	PARTIAL ACQ NEEDED FOR TRACK REALIGNMENT AND SIGNAL; TEMP ACCESS DISRUPTION DURING CONSTRUCTION
			6,150	TCE
05	6308-002-017	PBR SEVILLE LLC	8,360	PURCHASE ENTIRE CORNER PORTION OF LOT FOR TRACK AND SIGNAL CONSTRUCTION
06	6308-002-016	PBR SEVILLE LLC	55	PARTIAL ACQ NEEDED FOR SIGNAL ON SEVILLE AVE
07	6308-001-023	MCI PROPERTIES LLC	35	PARTIAL ACQ NEEDED FOR SIGNAL ON 46TH STREET
08	6308-001-026	CHAHAL WHITE LLC	75	PARTIAL ACQ NEEDED FOR SIGNAL ON 46TH STREET
09	6308-005-007	FLORMAN FAMILY	60	PARTIAL ACQ NEEDED FOR SIGNAL ON 46TH STREET
--	--	CITY OF VERNON	--	VARIOUS PERMANENT AND TEMPORARY RIGHTS NEEDED TO CONSTRUCT TRACK (MEDIANS, SIDEWALKS, CURB AND GUTTER, AND SIGNALS WITHIN STREET RIGHT-OF-WAY)

NOTE: ESTIMATED PROPERTY IMPACTS AS OF 10% CONCEPTUAL DESIGN. TOTAL IMPACTED AREA/LIMITS (PERMANENT AND TEMPORARY) AND PARCELS TO BE DETERMINED PENDING ADDITIONAL ENGINEERING DESIGN AND STAKEHOLDER COORDINATION.

JOINT USE AGREEMENTS (JUAs), NEW AND/OR MODIFICATIONS TO EXISTING, NOT SHOWN FOR CLARITY

NOTES:

1. FOR LOCATIONS OF ALL PROPOSED RR SIGNALS, SIGNAGE, FLASHERS, AND GATE ARMS SEE CIVIL AND TRACK PLANS
2. STREET TRAFFIC SIGNALS, AND ANY ASSOCIATED ROW IMPACTS, NOT SHOWN FOR CLARITY
3. PROPOSED/REPLACED ROW GATES, NOT SHOWN FOR CLARITY
4. FOR LOCATIONS OF ALL PROPOSED CITY OF VERNON STREET RIGHT-OF-WAY IMPROVEMENTS (MEDIANS, SIGNAGE, ETC...) SEE CIVIL AND TRACK PLANS. ASSOCIATED ROW IMPACTS, NOT SHOWN FOR CLARITY

50 25 0 50 100
SCALE: 1" = 50'

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SERIES ROW01 OF ROW02

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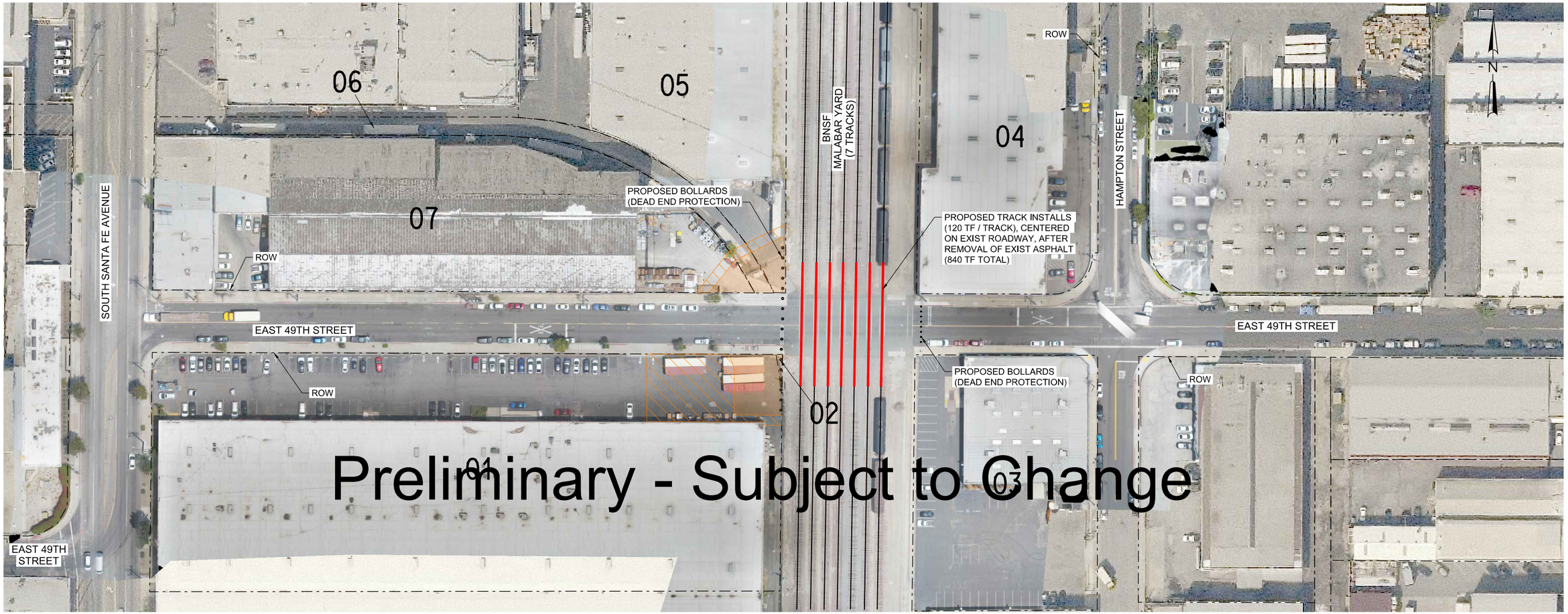
BNSF RAILWAY - HARBOR AND SAN BERNARDINO SUBDIVISION - BETWEEN TRACKS 7604-2750 AND 7665-1010

LAJ CONNECTOR/46TH STREET RIGHT-OF-WAY IMPACTS

FILENAME	16542_LAJ-C-ROW01.dgn	SHEET 5 OF 19
SCALE	(FULL-SIZE) - AS NOTED	



LEGEND:

- ESTIMATED PROPERTY IMPACTS (OUTSIDE OF BNSF ROW)
- TCE
- XX PARCEL DESIGNATION
- — - — - RIGHT OF WAY / PROPERTY LINE

RIGHT-OF-WAY IMPACTS (ESTIMATED)

ID	AIN	OWNER	ACQ AREA (SF)	DESCRIPTION
01	6308-011-010	KB NEW YORK BH LLC	2,750	PARTIAL ACQ NEEDED FOR HAMMERHEAD IMPROVEMENTS; TEMP ACCESS DISRUPTION DURING CONSTRUCTION
			6,085	TCE, CONSTRUCTION STAGING & MATERIAL STORAGE
02	6308-011-901	LACMTA	120	FULL ACQ
03	6308-010-037	2516 MILANI LLC	0	NO PROPERTY ACQ ANTICIPATED
04	6308-009-030	FINKEL-HAMPTON LLC	0	NO PROPERTY ACQ ANTICIPATED
05	6308-007-012	GREAT AMERICAN HOLDINGS INV LLC	1,180	PARTIAL ACQ NEEDED FOR HAMMERHEAD IMPROVEMENTS; TEMP ACCESS DISRUPTION DURING CONSTRUCTION
			405	TCE
06	6308-007-020	GREAT AMERICAN HOLDINGS INV LLC	735	PARTIAL ACQ NEEDED FOR HAMMERHEAD IMPROVEMENTS; TEMP ACCESS DISRUPTION DURING CONSTRUCTION
			175	TCE
07	6308-007-006	MELIDO, MICHAEL	730	PARTIAL ACQ NEEDED FOR HAMMERHEAD IMPROVEMENTS; TEMP ACCESS DISRUPTION DURING CONSTRUCTION
			470	TCE
	–	CITY OF VERNON	--	VARIOUS PERMANENT AND TEMPORARY RIGHTS NEEDED TO CONSTRUCT HAMMERHEAD (CURBS AND SIDEWALKS WITHIN STREET RIGHT-OF-WAY)

NOTE: ESTIMATED PROPERTY IMPACTS AS OF 10% CONCEPTUAL DESIGN. TOTAL IMPACTED AREA/LIMITS (PERMANENT AND TEMPORARY) AND PARCELS TO BE DETERMINED PENDING ADDITIONAL ENGINEERING DESIGN AND STAKEHOLDER COORDINATION.

JOINT USE AGREEMENTS (JUAs), NEW AND/OR MODIFICATIONS TO EXISTING, NOT SHOWN FOR CLARITY

NOTES:

1. FOR LOCATIONS OF ALL PROPOSED CITY OF VERNON STREET RIGHT-OF-WAY IMPROVEMENTS (SIDEWALKS, SIGNAGE, ETC...) SEE CIVIL PLANS. ASSOCIATED ROW IMPACTS, NOT SHOWN FOR CLARITY
2. PROPOSED/REPLACED ROW GATES (TO BE DETERMINED), NOT SHOWN FOR CLARITY
3. STREET TRAFFIC SIGNALS (TO BE DETERMINED), AND ANY ASSOCIATED ROW IMPACTS, NOT SHOWN FOR CLARITY

50 25 0 50 100
SCALE: 1" = 50'

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SERIES ROW02 OF ROW02

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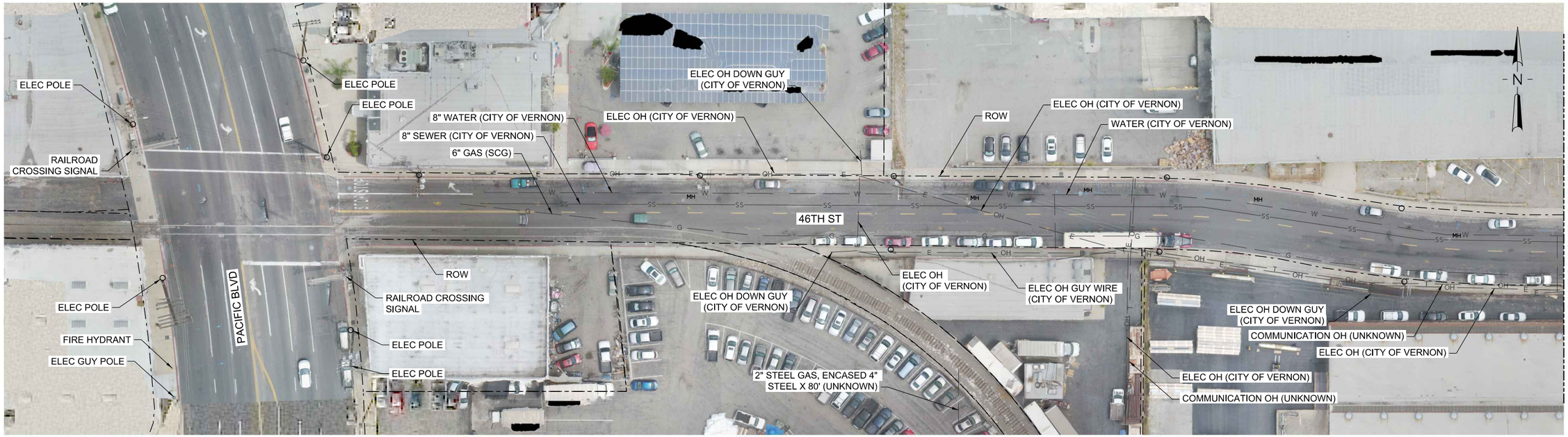
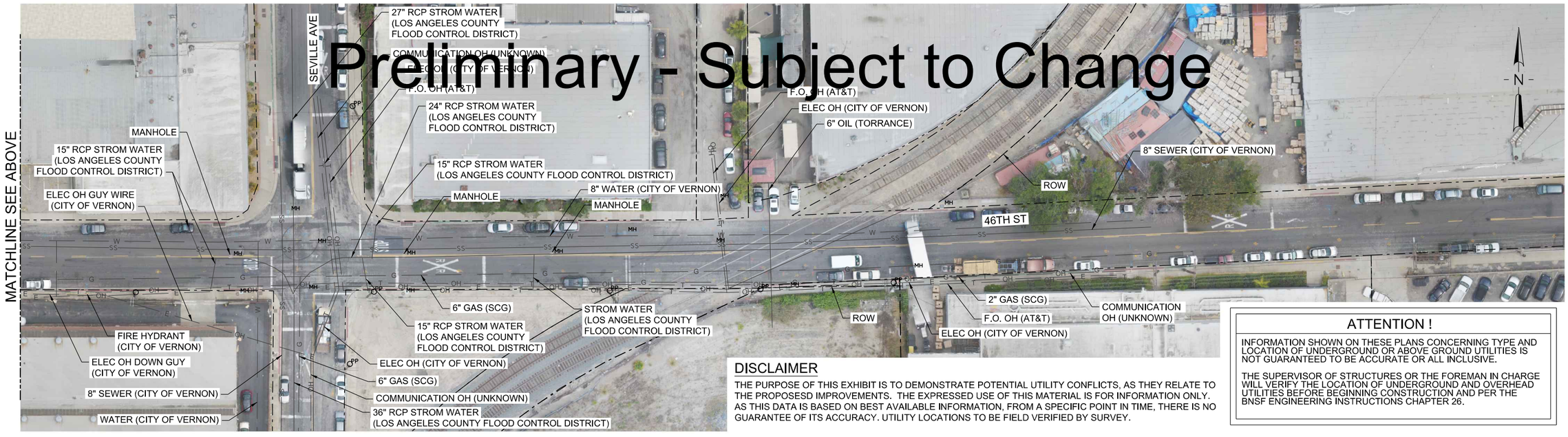
MALABAR YARD/49TH STREET CLOSURE RIGHT-OF-WAY IMPACTS

FILENAME	16542_MALA-C-ROW02.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 6 OF 19





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ATTENTION !

INFORMATION SHOWN ON THESE PLANS CONCERNING TYPE AND LOCATION OF UNDERGROUND OR ABOVE GROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE.

THE SUPERVISOR OF STRUCTURES OR THE FOREMAN IN CHARGE WILL VERIFY THE LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES BEFORE BEGINNING CONSTRUCTION AND PER THE BNSF ENGINEERING INSTRUCTIONS CHAPTER 26.

30 15 0 30 60
SCALE: 1" = 30'

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BNSF RAILWAY - HARBOR AND SAN BERNARDINO SUBDIVISION - BETWEEN TRACKS 7604-2750 AND 7665-1010

LAJ CONNECTOR/46TH STREET EXISTING UTILITIES

FILENAME	16542-LAJ-U-UT01.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 7 OF 19

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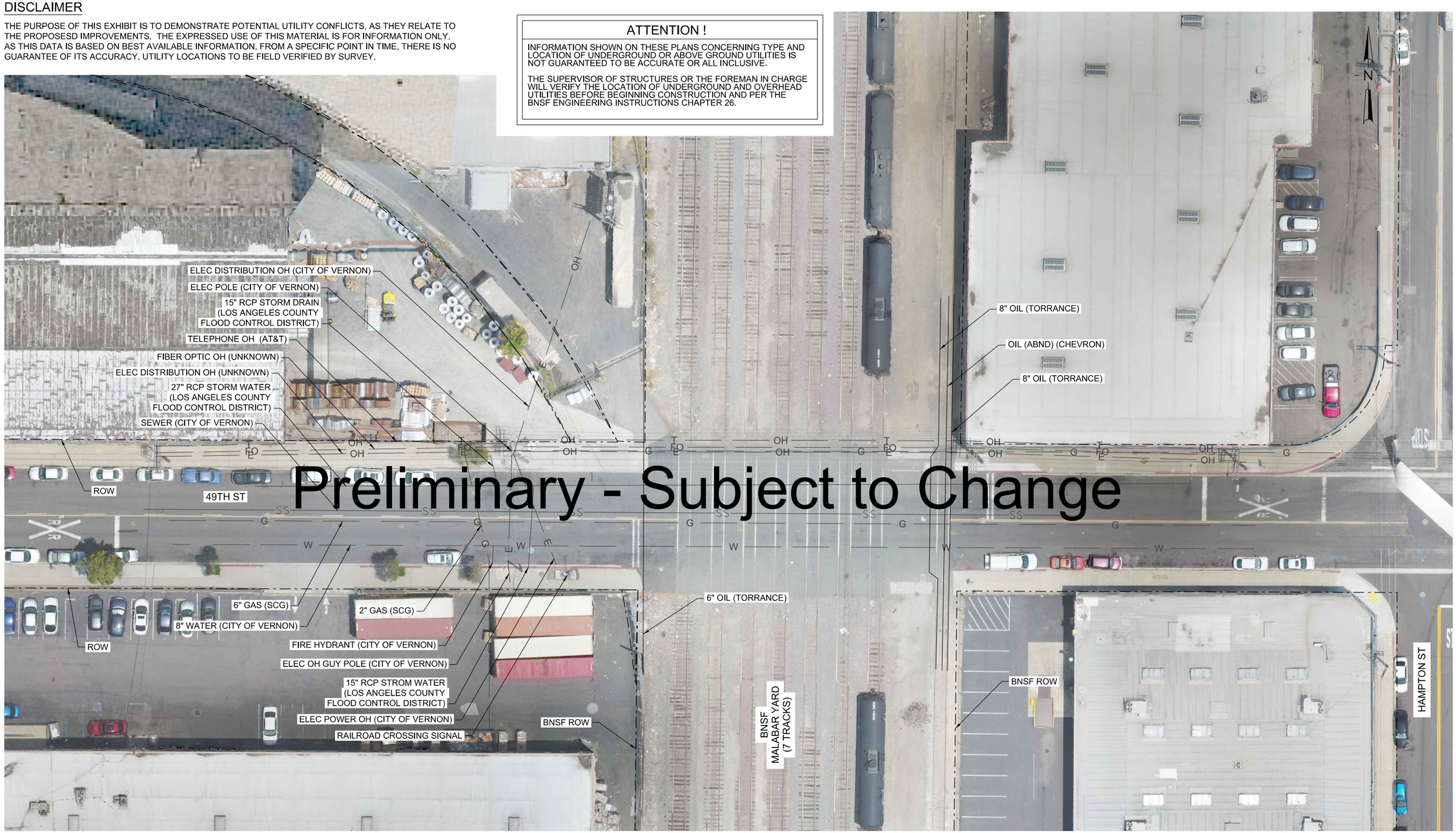
THE SUPERVISOR OF STRUCTURES OR THE FOREMAN IN CHARGE WILL VERIFY THE LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES BEFORE BEGINNING CONSTRUCTION AND PER THE BNSF ENGINEERING INSTRUCTIONS CHAPTER 26.



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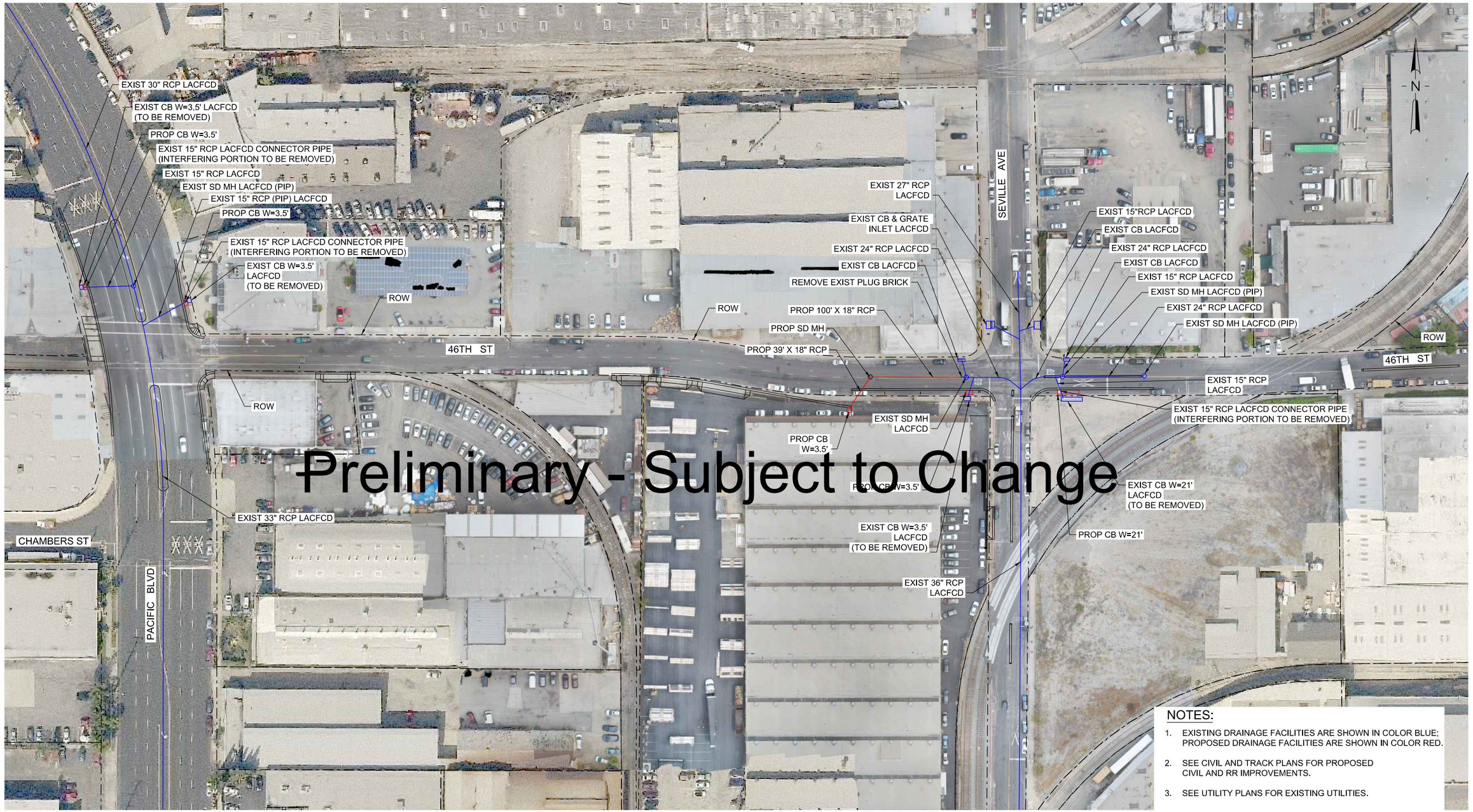
MALABAR YARD/49TH ST CLOSURE EXISTING UTILITIES

FILENAME	16542-MALA-U-UT02.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 8 OF 19



Preliminary - Subject to Change

NOTES:

1. EXISTING DRAINAGE FACILITIES ARE SHOWN IN COLOR BLUE; PROPOSED DRAINAGE FACILITIES ARE SHOWN IN COLOR RED.
2. SEE CIVIL AND TRACK PLANS FOR PROPOSED CIVIL AND RR IMPROVEMENTS.
3. SEE UTILITY PLANS FOR EXISTING UTILITIES.

50 25 0 50 100
SCALE: 1" = 50'

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SERIES SD01 OF SD02

PLOT DATE: 2/26/2021 5:17:51 PM WSTEBOK

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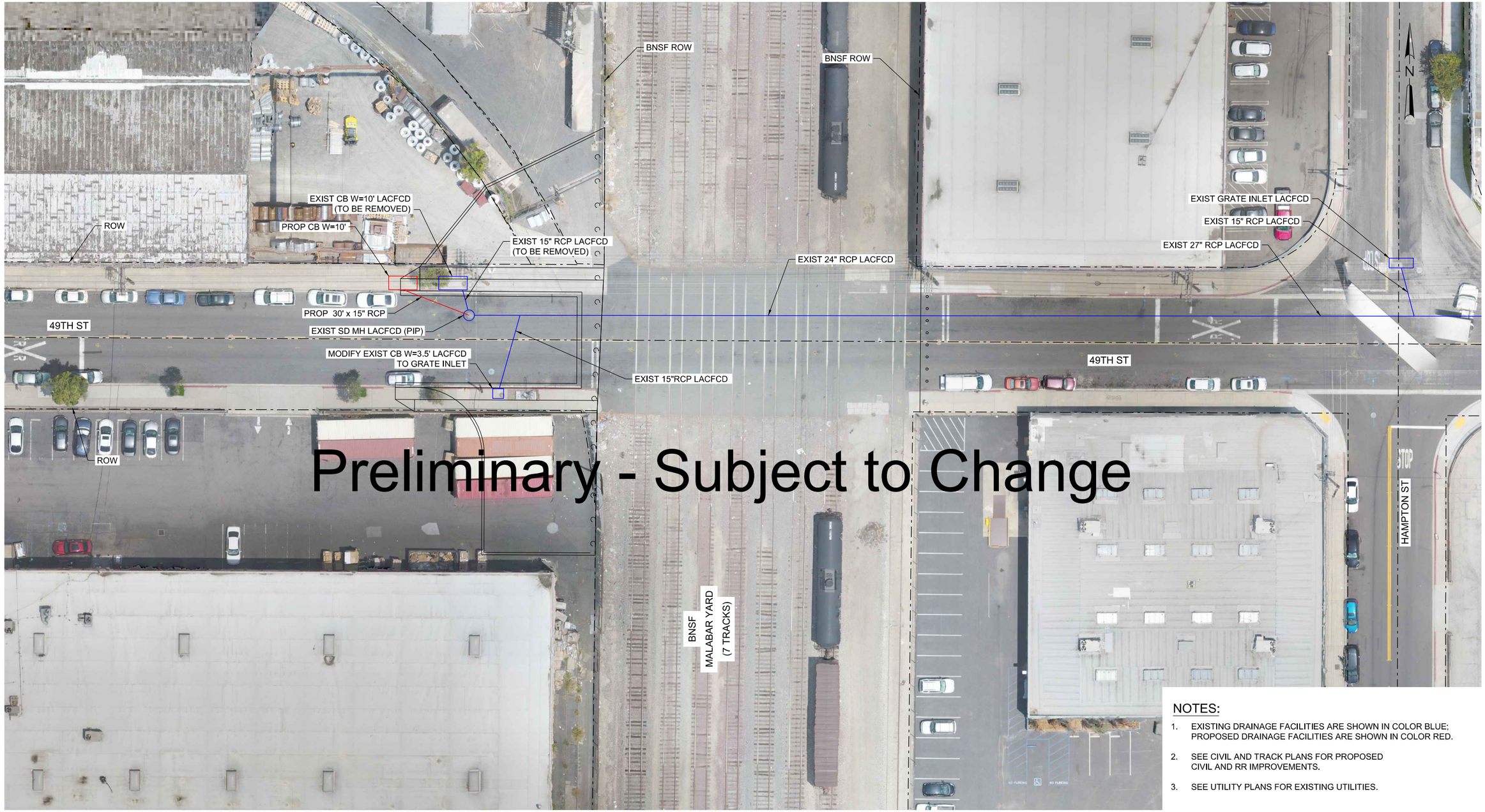
LAJ CONNECTOR/46TH STREET EXISTING/PROPOSED DRAINAGE

FILENAME	16542-LAJ-SD-01.dgn	SHEET	9 OF 19
SCALE	(FULL-SIZE) - AS NOTED		



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NOTES:

1. EXISTING DRAINAGE FACILITIES ARE SHOWN IN COLOR BLUE; PROPOSED DRAINAGE FACILITIES ARE SHOWN IN COLOR RED.
2. SEE CIVIL AND TRACK PLANS FOR PROPOSED CIVIL AND RR IMPROVEMENTS.
3. SEE UTILITY PLANS FOR EXISTING UTILITIES.

20 10 0 20 40
SCALE: 1" = 20'

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SERIES SD02 OF SD02

PLOT DATE: 2/26/2021 5:18:10 PM WSTEBOK

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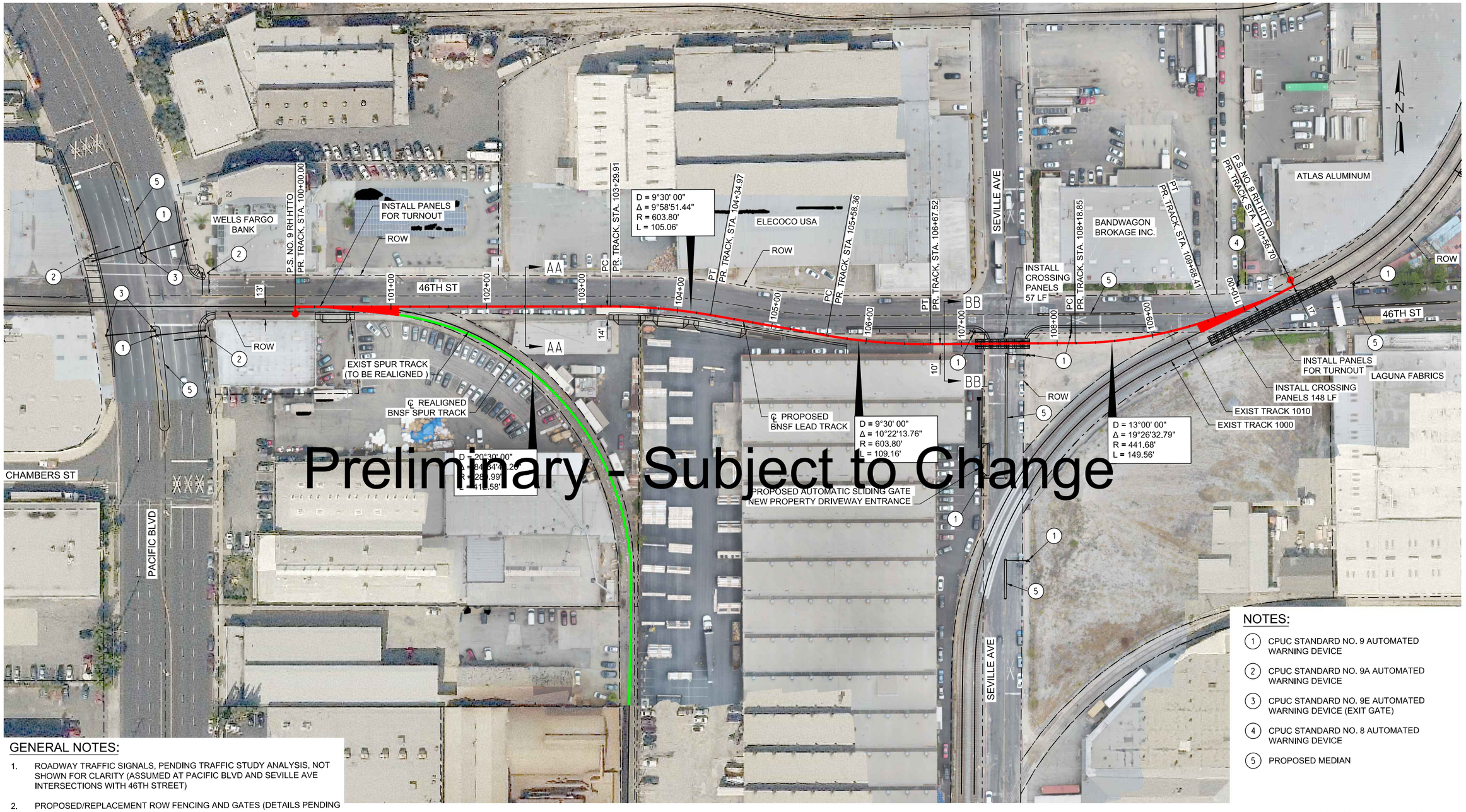
MALABAR YARD/49TH ST CLOSURE EXISTING/PROPOSED DRAINAGE

FILENAME	16542-MALA-SD-01.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 10 OF 19



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GENERAL NOTES:

1. ROADWAY TRAFFIC SIGNALS, PENDING TRAFFIC STUDY ANALYSIS, NOT SHOWN FOR CLARITY (ASSUMED AT PACIFIC BLVD AND SEVILLE AVE INTERSECTIONS WITH 46TH STREET)
2. PROPOSED/REPLACEMENT ROW FENCING AND GATES (DETAILS PENDING STAKEHOLDER COORDINATION)

NOTES:

1. CPUC STANDARD NO. 9 AUTOMATED WARNING DEVICE
2. CPUC STANDARD NO. 9A AUTOMATED WARNING DEVICE
3. CPUC STANDARD NO. 9E AUTOMATED WARNING DEVICE (EXIT GATE)
4. CPUC STANDARD NO. 8 AUTOMATED WARNING DEVICE
5. PROPOSED MEDIAN

50 25 0 50 100
SCALE: 1" = 50'

NOT FOR CONSTRUCTION

SERIES P01 OF P02

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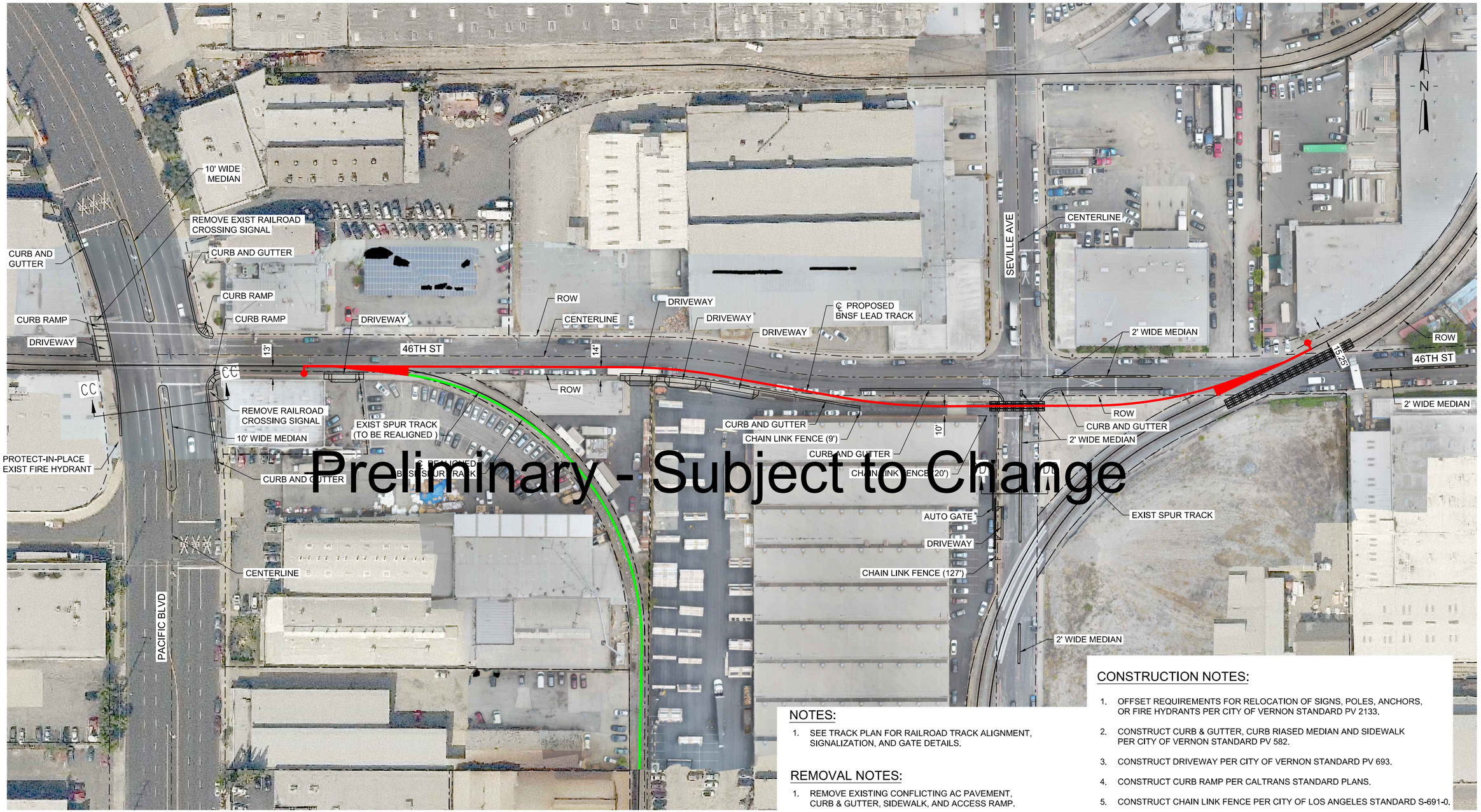
TRACK PLAN

FILENAME	16542_LAJ-R-LD-P01.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 11 OF 19



Preliminary - Subject to Change

NOTES:

1. SEE TRACK PLAN FOR RAILROAD TRACK ALIGNMENT, SIGNALIZATION, AND GATE DETAILS.

REMOVAL NOTES:

1. REMOVE EXISTING CONFLICTING AC PAVEMENT, CURB & GUTTER, SIDEWALK, AND ACCESS RAMP.

CONSTRUCTION NOTES:

1. OFFSET REQUIREMENTS FOR RELOCATION OF SIGNS, POLES, ANCHORS, OR FIRE HYDRANTS PER CITY OF VERNON STANDARD PV 2133.
2. CONSTRUCT CURB & GUTTER, CURB RIASED MEDIAN AND SIDEWALK PER CITY OF VERNON STANDARD PV 582.
3. CONSTRUCT DRIVEWAY PER CITY OF VERNON STANDARD PV 693.
4. CONSTRUCT CURB RAMP PER CALTRANS STANDARD PLANS.
5. CONSTRUCT CHAIN LINK FENCE PER CITY OF LOS ANGELES STANDARD S-691-0.

50 25 0 50 100
SCALE: 1" = 50'

NOT FOR CONSTRUCTION

SERIES P02 OF P02

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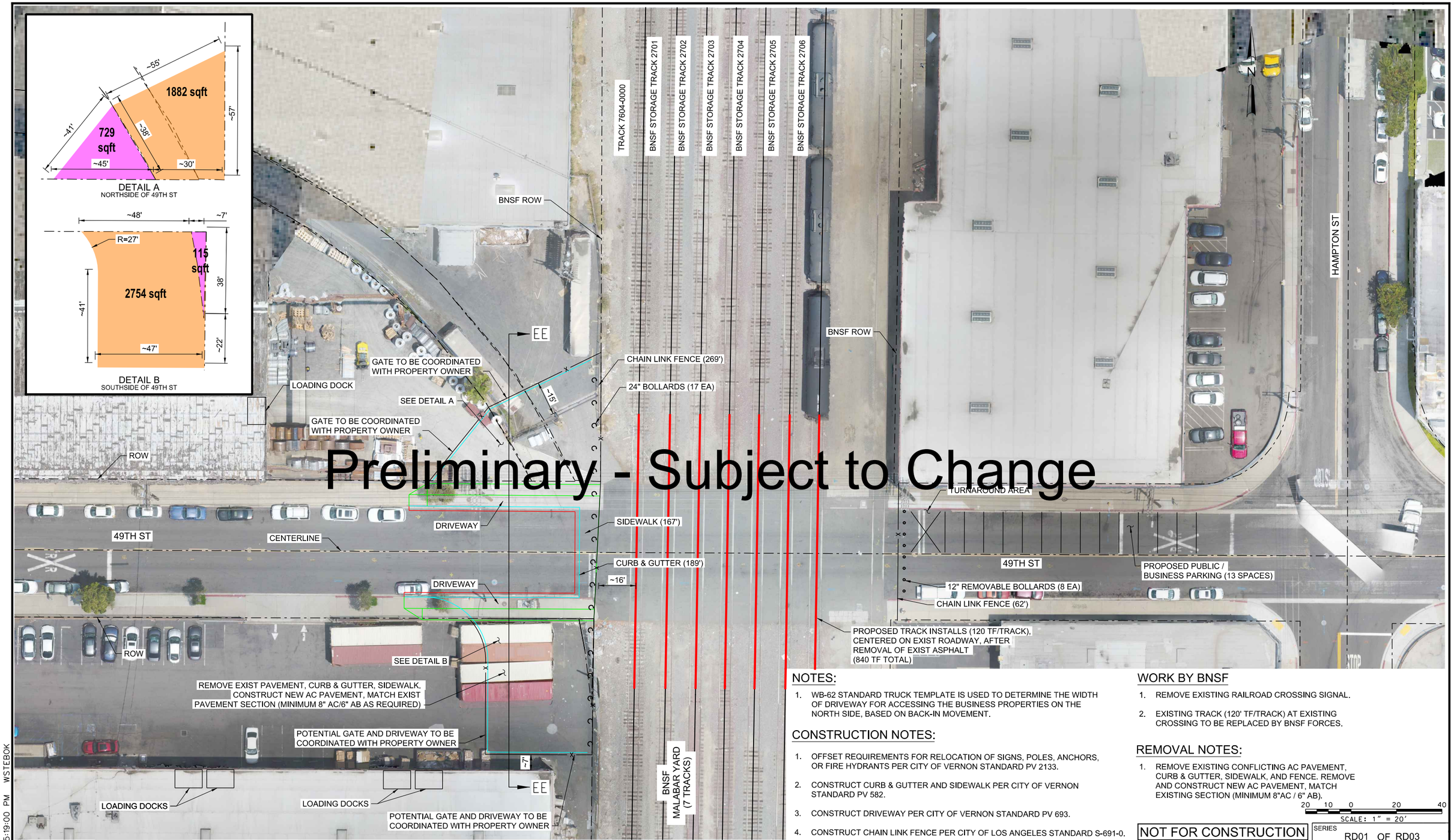
CIVIL PLAN

FILENAME	16542-LAJ-C-P02.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 12 OF 19



Preliminary - Subject to Change

NOTES:

1. WB-62 STANDARD TRUCK TEMPLATE IS USED TO DETERMINE THE WIDTH OF DRIVEWAY FOR ACCESSING THE BUSINESS PROPERTIES ON THE NORTH SIDE, BASED ON BACK-IN MOVEMENT.

CONSTRUCTION NOTES:

1. OFFSET REQUIREMENTS FOR RELOCATION OF SIGNS, POLES, ANCHORS, OR FIRE HYDRANTS PER CITY OF VERNON STANDARD PV 2133.
2. CONSTRUCT CURB & GUTTER AND SIDEWALK PER CITY OF VERNON STANDARD PV 582.
3. CONSTRUCT DRIVEWAY PER CITY OF VERNON STANDARD PV 693.
4. CONSTRUCT CHAIN LINK FENCE PER CITY OF LOS ANGELES STANDARD S-691-0.

WORK BY BNSF

1. REMOVE EXISTING RAILROAD CROSSING SIGNAL.
2. EXISTING TRACK (120' TF/TRACK) AT EXISTING CROSSING TO BE REPLACED BY BNSF FORCES.

REMOVAL NOTES:

1. REMOVE EXISTING CONFLICTING AC PAVEMENT, CURB & GUTTER, SIDEWALK, AND FENCE. REMOVE AND CONSTRUCT NEW AC PAVEMENT, MATCH EXISTING SECTION (MINIMUM 8"AC / 6" AB).

20 10 0 20 40
SCALE: 1" = 20'

NOT FOR CONSTRUCTION

SERIES RD01 OF RD03

PLOT DATE: 2/26/2021 5:19:00 PM WSTEBOK

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MALABAR YARD/49TH ST CLOSURE GRADE CROSSING

FILENAME	16542-MALA-C-RD01.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 13 OF 19

NOTES:

1. SEE TRACK PLAN FOR RAILROAD TRACK ALIGNMENT, SIGNALIZATION, AND GATE DETAILS.

REMOVAL NOTES:

1. REMOVE EXISTING CONFLICTING AC PAVEMENT, CURB & GUTTER, SIDEWALK, AND ACCESS RAMP.
2. WET SANDBLAST AND REMOVE EXISTING CONFLICTING STRIPES AND/OR PAVEMENT MARKINGS.
3. REMOVE EXISTING CONFLICTING ROAD SIGN AND/OR POST.

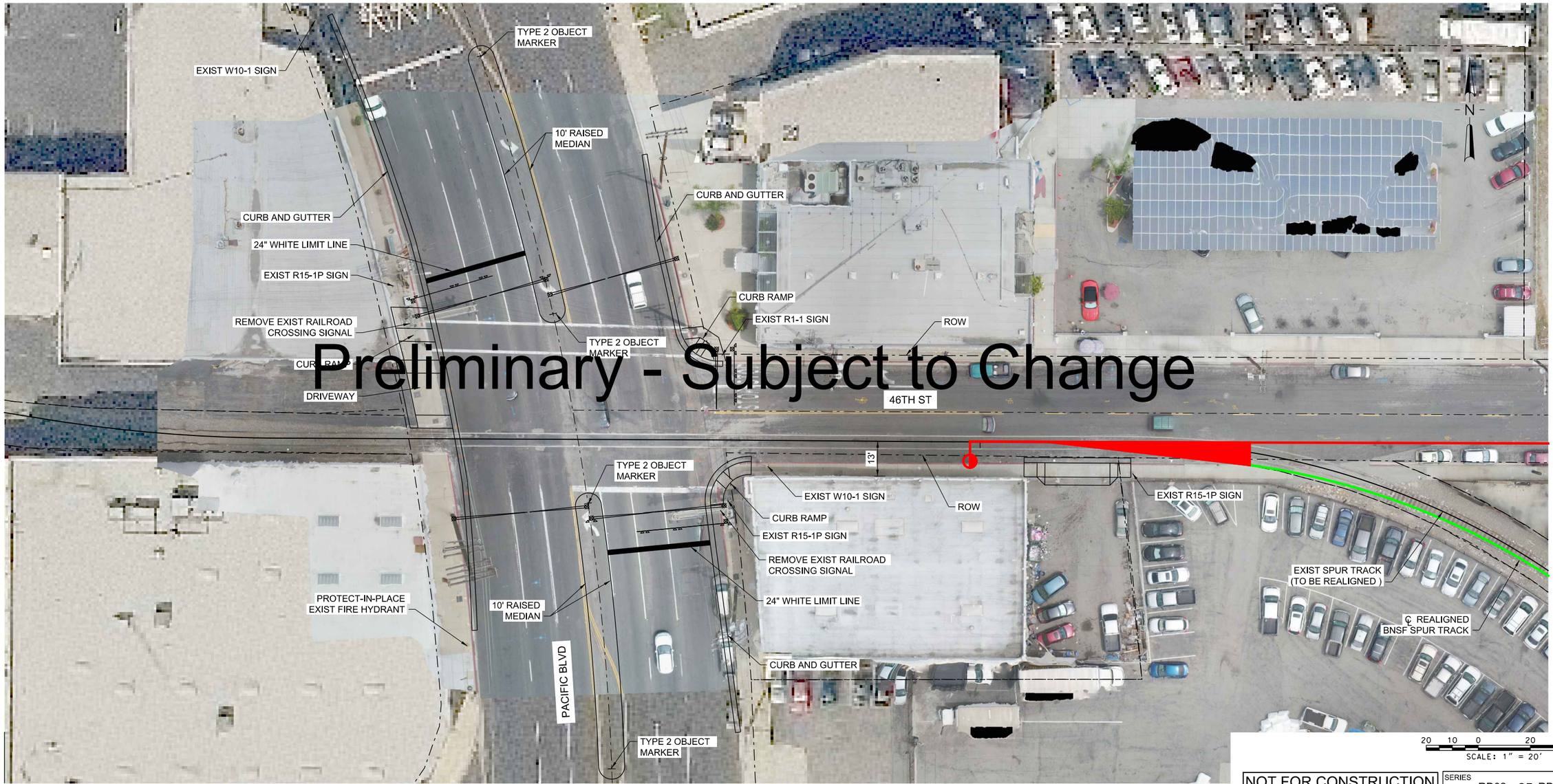
CONSTRUCTION NOTES:

1. OFFSET REQUIREMENTS FOR RELOCATION OF SIGNS, POLES, ANCHORS, OR FIRE HYDRANTS PER CITY OF VERNON STANDARD PV 2133.
2. CONSTRUCT CURB & GUTTER, CURB RAISED MEDIAN AND SIDEWALK PER CITY OF VERNON STANDARD PV 582.
3. CONSTRUCT CURB RAMP PER CALTRANS STANDARD PLANS.
4. INSTALL PAVEMENT STRIPES, MARKINGS, AND ROAD SIDE SIGNS PER CA MUTCD STANDARD DETAILS.

SIGNAGE REFERENCES

OM2-1H

TYPE 2 OBJECT MARKER



20 10 0 20 40

SCALE: 1" = 20'

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SERIES RD02 OF RD03

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LINE SEG:	7604/7665

BNSF RAILWAY - HARBOR AND SAN BERNARDINO
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PACIFIC BLVD AND 46TH STREET GRADE CROSSING

FILENAME	16542-LAJ-C-RD02.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 14 OF 19

NOTES:

1. SEE TRACK PLAN FOR RAILROAD TRACK ALIGNMENT, SIGNALIZATION, AND GATE DETAILS.

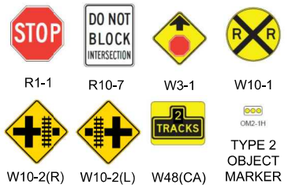
REMOVAL NOTES:

1. REMOVE EXISTING CONFLICTING AC PAVEMENT, CURB & GUTTER, SIDEWALK, AND ACCESS RAMP.
2. WET SANDBLAST AND REMOVE EXISTING CONFLICTING STRIPES AND/OR PAVEMENT MARKINGS.
3. REMOVE EXISTING CONFLICTING ROAD SIGN AND/OR POST.

CONSTRUCTION NOTES:

1. OFFSET REQUIREMENTS FOR RELOCATION OF SIGNS, POLES, ANCHORS, OR FIRE HYDRANTS TO BE PER CITY OF VERNON STANDARD PV 2133.
2. CONSTRUCT CURB & GUTTER, CURB RAISED MEDIAN AND SIDEWALK PER CITY OF VERNON STANDARD PV 582.
3. CONSTRUCT CURB RAMP PER CALTRANS STANDARD PLANS.
4. INSTALL PAVEMENT STRIPES, MARKINGS, AND ROAD SIDE SIGNS PER CA MUTCD STANDARD DETAILS.

SIGNAGE REFERENCES



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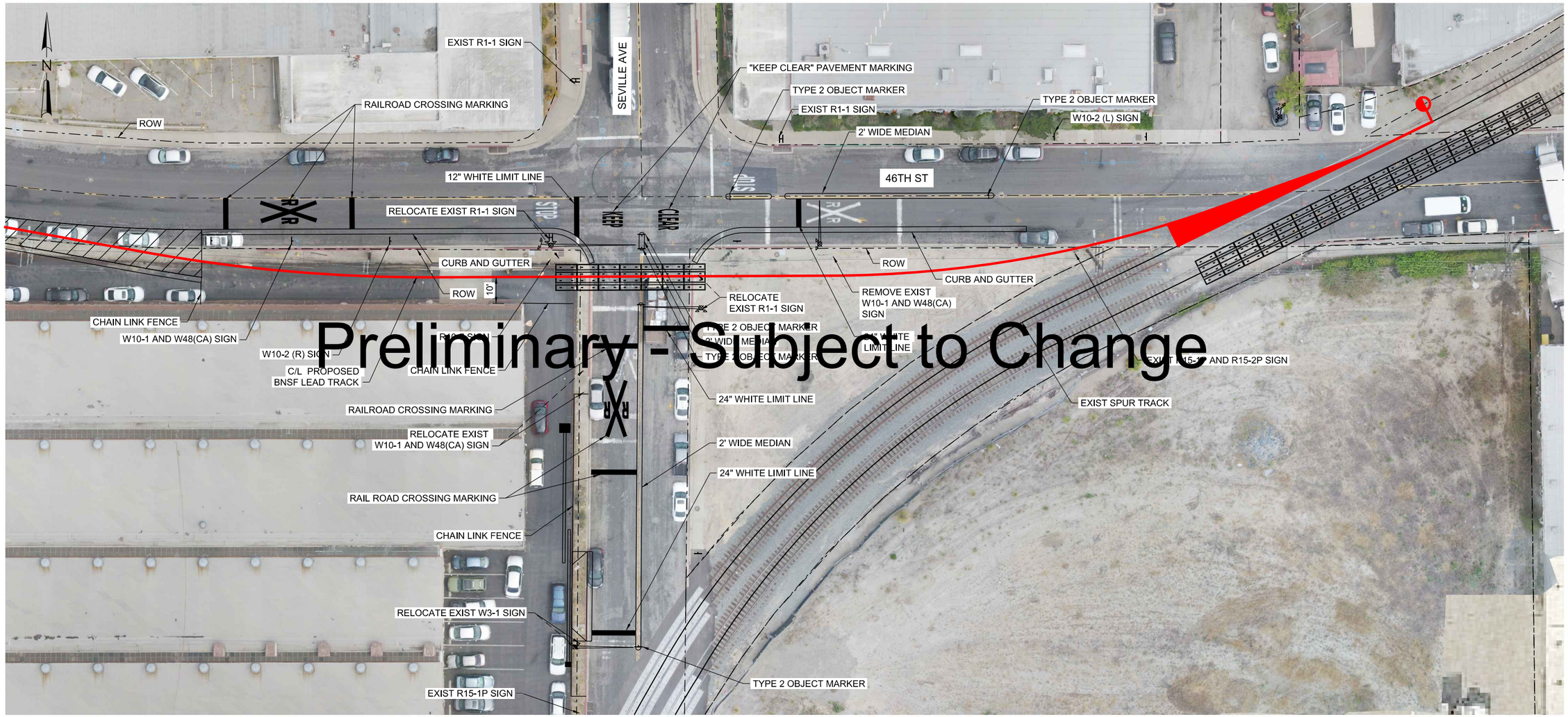

Preliminary - Subject to Change

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SCALE: 1" = 20'

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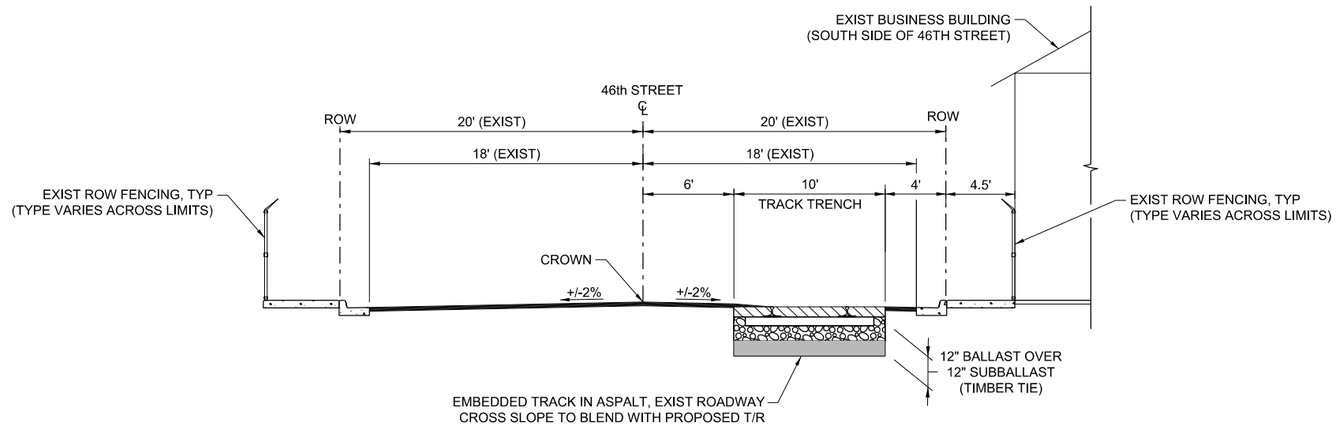
SEVILLE AVE AND 46TH ST GRADE CROSSING

FILENAME	16542-LAJ-C-RD03.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 15 OF 19



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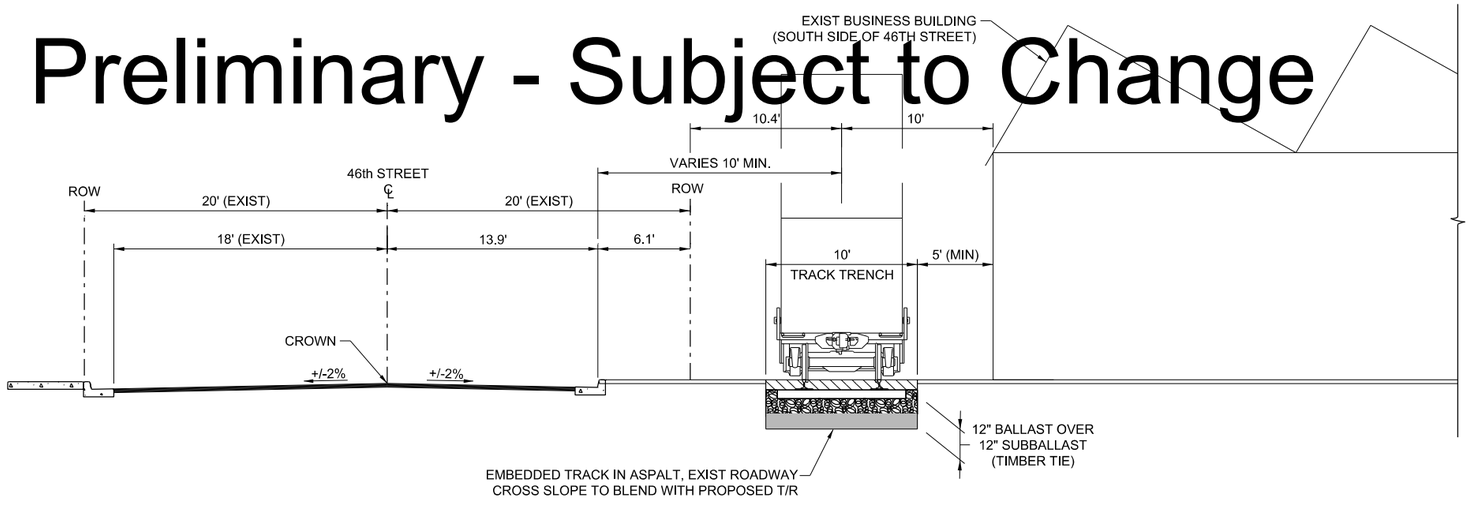
NOT TO SCALE
(VIEW LOOKING EAST)

AA
P01

Preliminary - Subject to Change



TYPICAL SECTION - ASPHALT EMBEDDED TRACK
OUTSIDE OF ROADWAY SECTION

NOT TO SCALE
(VIEW LOOKING EAST)

BB
P01

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SERIES TS01 OF TS02

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BNSF RAILWAY - HARBOR AND SAN BERNARDINO
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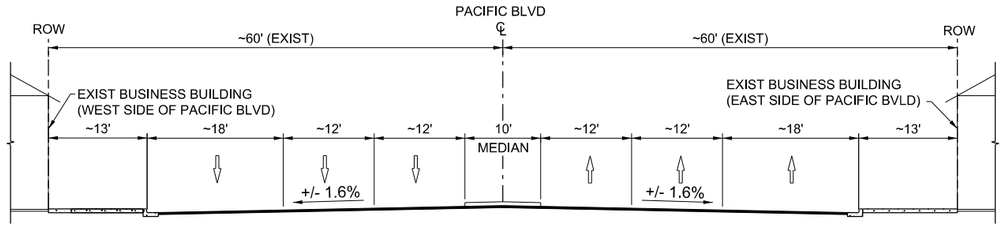
RAIL TYPICAL SECTIONS

FILENAME	16542_LAJ-R-TS01.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 16 OF 19



TYPICAL SECTION - PACIFIC BLVD (CC, P02)

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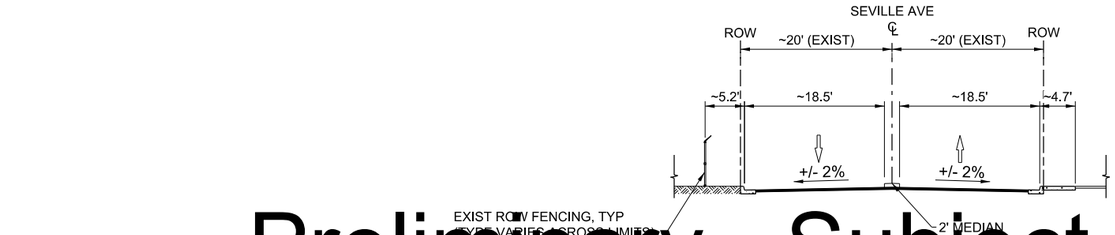
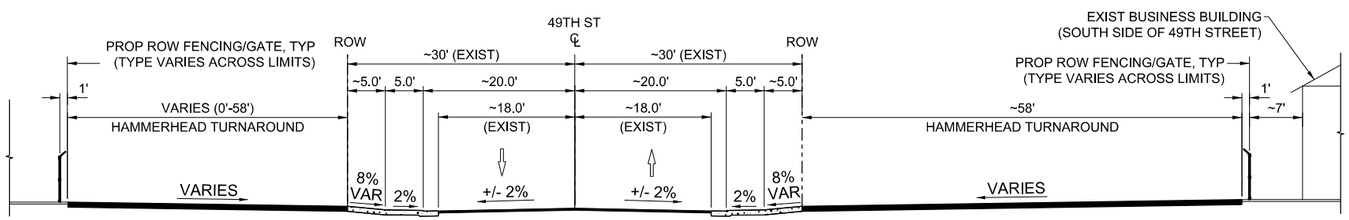
(VIEW LOOKING NORTH)



Preliminary - Subject to Change

TYPICAL SECTION - SEVILLE AVE (DD, P02)

NOT TO SCALE
(VIEW LOOKING NORTH)



TYPICAL SECTION - 49TH ST (EE, RD01)

NOT TO SCALE
(VIEW LOOKING EAST)

NOT FOR CONSTRUCTION

SERIES TS02 OF TS02

PLOT DATE: 2/26/2021 5:20:45 PM WSTEBOK

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BNSF RAILWAY - HARBOR AND SAN BERNARDINO
SUBDIVISION - BETWEEN TRACKS 7604-2750 AND 7665-1010

CIVIL TYPICAL SECTIONS

FILENAME	16542_MALA-C-TS02.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 17 OF 19

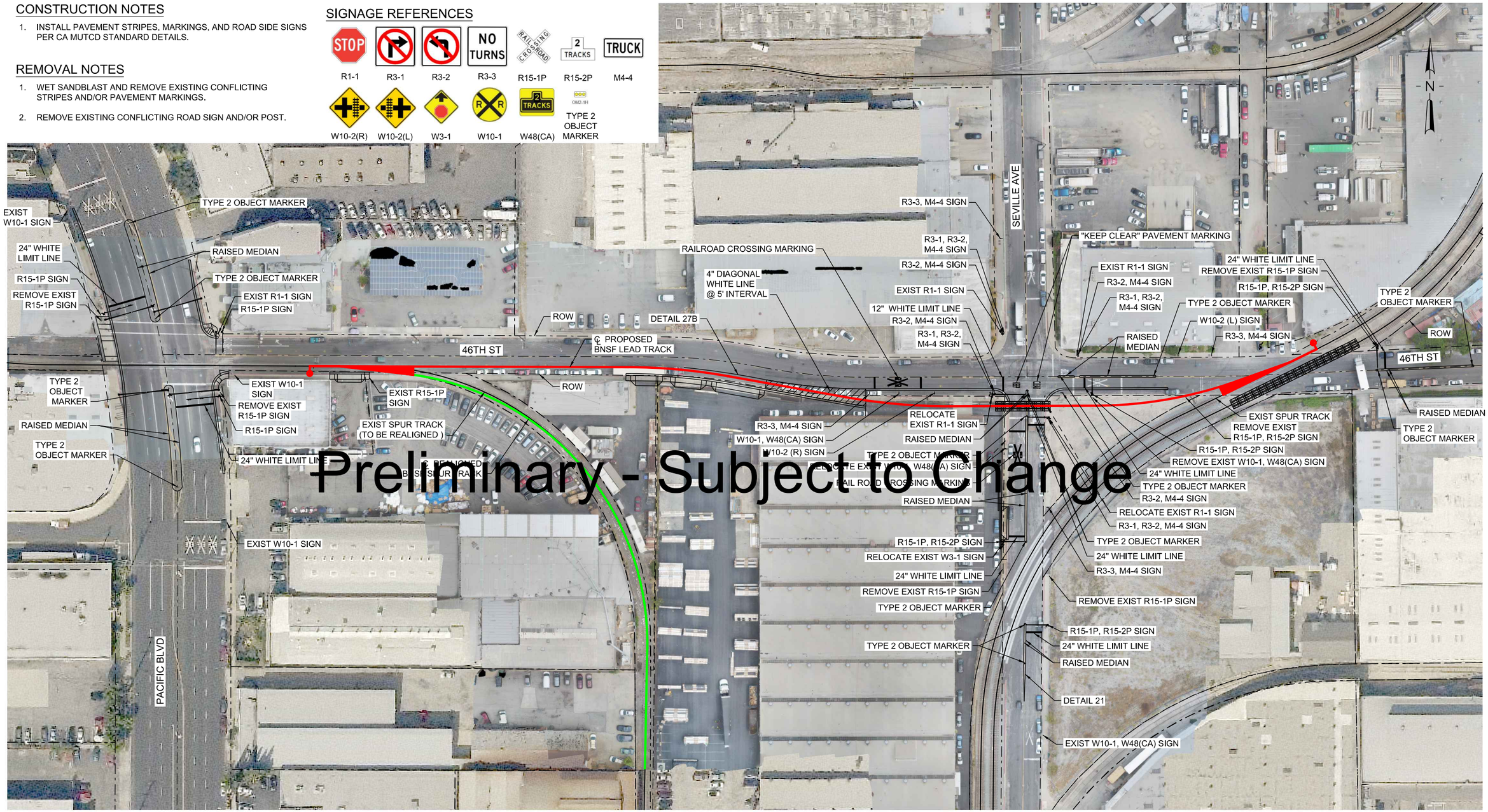
CONSTRUCTION NOTES

1. INSTALL PAVEMENT STRIPES, MARKINGS, AND ROAD SIDE SIGNS PER CA MUTCD STANDARD DETAILS.

REMOVAL NOTES

1. WET SANDBLAST AND REMOVE EXISTING CONFLICTING STRIPES AND/OR PAVEMENT MARKINGS.
2. REMOVE EXISTING CONFLICTING ROAD SIGN AND/OR POST.

SIGNAGE REFERENCES



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PLOT DATE: 2/26/2021 5:21:18 PM WSTEBOK

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BNSF RAILWAY - HARBOR AND SAN BERNARDINO SUBDIVISION - BETWEEN TRACKS 7604-2750 AND 7665-1010

LAJ CONNECTOR/46TH STREET STRIPING AND SIGNAGE

FILENAME	16542-LAJ-C-SS01.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 18 OF 19

CONSTRUCTION NOTES

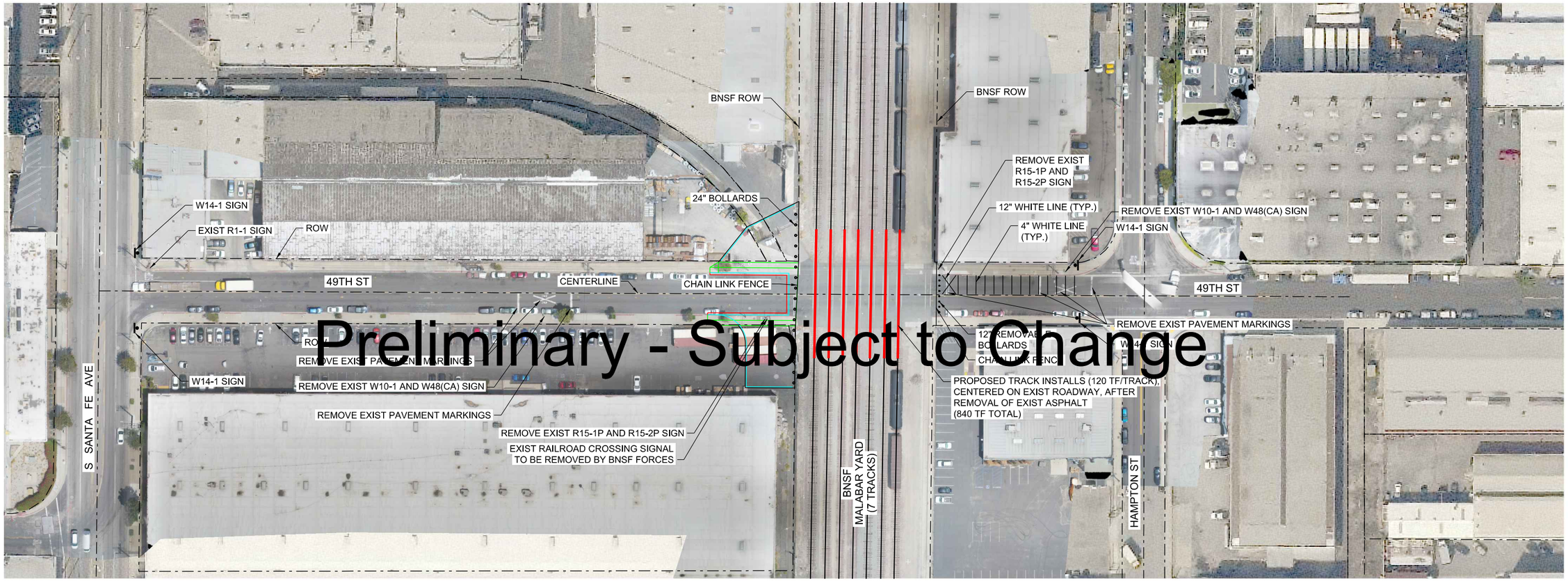
1. INSTALL PAVEMENT STRIPES, MARKINGS, AND ROAD SIDE SIGNS PER CA MUTCD STANDARD DETAILS.

REMOVAL NOTES

1. WET SANDBLAST AND REMOVE EXISTING CONFLICTING STRIPES AND/OR PAVEMENT MARKINGS.
2. REMOVE EXISTING CONFLICTING ROAD SIGN AND/OR POST.

SIGNAGE REFERENCES

W14-1



Preliminary - Subject to Change

N

50 25 0 50 100
SCALE: 1" = 50'

NOT FOR CONSTRUCTION

SERIES SS02 OF SS02

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MALABAR YARD/49TH ST CLOSURE STRIPING AND SIGNAGE

FILENAME	16542-MALA-C-SS02.dgn
SCALE	(FULL-SIZE) - AS NOTED

SHEET 19 OF 19

PLOT DATE: 2/26/2021 5:21:47 PM WSTEBOK

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Appendix C. Malabar Yard Traffic Technical Memorandum

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Malabar Yard Traffic Technical Memorandum

Date: Tuesday, September 19, 2023

Project: Link Union Station (Link US) Project

Subject: **Anticipated Traffic Condition Changes due to Change in Opening Year from 2024 to 2031 for Malabar Yard Improvements**

The purpose of this memorandum is to document the potential traffic condition changes and determine if the potential change in the Opening Year from 2024 to 2031 for Malabar Yard improvements as part of the Link Union Station (Link US) would result in any change in the project impacts.

In the administrative draft Environmental Impact Statement/Supplemental Environmental Impact Report (EIS/SEIR), the project Opening year was year 2024 when the Notice of Intent (NOI) was released. The Traffic Impact Assessment (TIA) was conducted using this Opening year and project impacts were determined and mitigation measures were recommended to mitigate those impacts.

Project Opening Year (2024) Traffic Forecast

The Malabar Yard improvements was initially expected to be operational in the year 2024 when the Link US project was started in 2015. Therefore, as part of the EIS/SEIR, the traffic impact analysis was conducted using 2024 as an Opening Year. The project Opening year (2024) No build Conditions traffic was determined by adding an annual growth rate. The future forecast was based on the Southern California Association of Governments Regional Transportation Plan Model (SCAG RTP). Therefore, the future land use developments and traffic circulation for the No Build Conditions including all the other model assumptions were included in the annual growth rate that was applied to the intersections and roadways to develop the Construction Year (2024) and Opening Year (2024) No Build volumes.

Construction Year (2024) and Opening Year (2024) was assumed to include ambient growth and cumulative projects that are currently approved in the *SCAG 2020 RTP/SCS* but without the proposed Malabar Yard off-site improvements. It should be noted here the SCAG 2016 RTP/SCS was also used to evaluate Link US Project-related traffic impacts in the vicinity of LAUS in the City of Los Angeles since the traffic study was initiated in 2016, and this was the most recent SCAG model available at the time.

The 2020 SCAG RTP Travel Demand Model was used to estimate future growth rates for baseline scenarios. The ratio of the base year (2016) and future year (2040) link volumes in the SCAG model were used to compute separate growth factors for entering and exiting volumes for each leg of each study intersection during both AM and PM peak periods. The growth factor for the AM and PM peak period was applied using the continuous compound growth formula to the base year AM and PM peak hour traffic counts (respectively) to produce future initial link volumes for analysis.

The growth factor of 1 percent per year was derived from the SCAG RTP Travel Demand Model. Also, this growth year was found to be consistent with other traffic impact studies within the City of Vernon. This growth rate was used to determine the Opening Year (2024), Construction Year (2024) and Future Year (2040) No Build volumes.

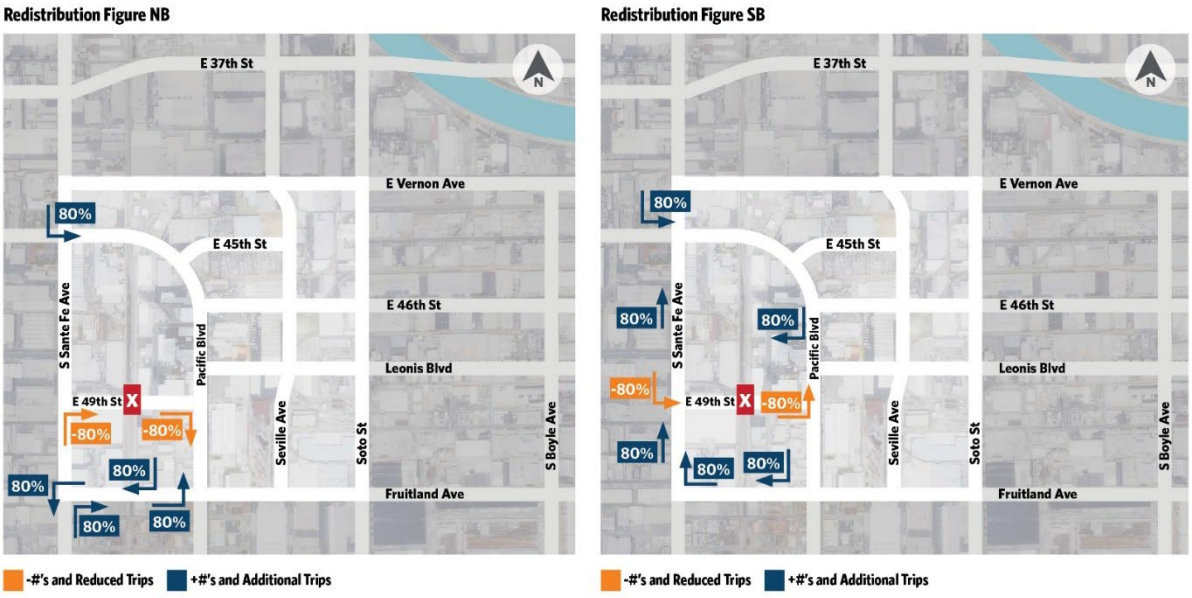
Malabar Yard Project Trip Generation

The proposed off-site improvements would not generate any new trips. However, the existing traffic patterns will be altered due to closure of 49th Street and the 46th Street Connector as shown in Figure 1. The change in traffic behavior is expected due to the following:

1. **49th Street Closure** – The proposed closure of the existing at-grade railroad crossing at 49th Street would result in restriction to through traffic along 49th Street. Properties located on the east side of the railroad crossing would have to go around the closed crossing by using Pacific Boulevard, Santa Fe Avenue and Fruitland Avenue to access properties located to the west side of the railroad crossing and vice versa.
2. **46th Street Connector** – A portion of the 46th Street connector is proposed to be passing through the existing right-of-way along 46th Street between Pacific Boulevard and Soto Street. This would discourage the through traffic currently using this street and would result in rerouting to other adjacent street like Leonis Boulevard which is adjacent to 46th Street and runs parallel to 46th Street. Therefore, 50 percent of the traffic from 46th Street would now use Leonis Boulevard once the off-site improvements are in place.

Therefore, no new project related traffic was generated due to Malabar yard improvements while the existing traffic was redistributed.

Figure 1. Project-Related Redistribution of Traffic along 49th Street



Change in Opening Year from 2024 to 2031

Due to delays in the proposed project, the current project opening year of 2024 is no longer feasible since the project would not be built and operational by 2024. Therefore, the new project opening year proposed is 2031. Based on the Level of Service (LOS) analysis in the Malabar Yard Traffic Impact Analysis, two study intersections were impacted significantly due to the project. It should be noted that the project would generate no new trips but the existing traffic will be re-distributed due to closures at 49th Street and 46th Street.

The level of degradation of LOS at the two impacted intersections would stay the same between 2024 and 2031 since the addition of redistributed trips due to the project would be the same. As a result there will be no change in the conclusion from the traffic impact study results that were conducted with the project opening year as 2024. Changing the project opening year to 2031 would not result in any change to the already impacted intersections when the opening year was 2024.

Appendix D. Malabar Yard CalEEMod Annual Construction Tables

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Malabar Yard Construction

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	4.00	Acre	4.00	174,240.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2031
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MWhr)	691.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Updated run for construction years 2028-2030

Land Use -

Construction Phase - Phases and dates updated to 2028-2030

Off-road Equipment - equipment from project description

Off-road Equipment - Equipment list from project description

Off-road Equipment - equipment from project description

Off-road Equipment - Equipment list from project description

Off-road Equipment - equipment from project description

Off-road Equipment - equipment from project description

Off-road Equipment - equipment from project description

Off-road Equipment - Equipment list from project description

Off-road Equipment - Equipment list from project description

Malabar Yard Construction - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-road Equipment - equipment from project description

Off-road Equipment - equipment from project description

Off-road Equipment - equipment from project description

Trips and VMT - haul truck and employee trips from project description

Demolition -

Construction Off-road Equipment Mitigation - Per Metro requirements, all off-road equipment will meet Tier 4F standards

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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tblConstructionPhase	PhaseEndDate	8/30/2028	10/30/2028
tblConstructionPhase	PhaseEndDate	8/1/2031	12/2/2030
tblConstructionPhase	PhaseEndDate	8/27/2031	12/30/2030
tblConstructionPhase	PhaseEndDate	9/22/2031	12/30/2030
tblConstructionPhase	PhaseEndDate	5/19/2031	11/4/2030
tblConstructionPhase	PhaseEndDate	6/12/2031	7/3/2030
tblConstructionPhase	PhaseEndDate	7/8/2031	11/4/2030
tblConstructionPhase	PhaseEndDate	8/30/2028	5/2/2030

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstructionPhase	PhaseEndDate	8/30/2028	5/2/2030
tblConstructionPhase	PhaseStartDate	8/31/2028	5/3/2030
tblConstructionPhase	PhaseStartDate	7/19/2029	7/6/2030
tblConstructionPhase	PhaseStartDate	6/6/2030	9/3/2030
tblConstructionPhase	PhaseStartDate	8/3/2028	8/1/2028
tblConstructionPhase	PhaseStartDate	7/9/2031	11/5/2030
tblConstructionPhase	PhaseStartDate	8/2/2031	12/3/2030
tblConstructionPhase	PhaseStartDate	8/28/2031	12/3/2030
tblConstructionPhase	PhaseStartDate	4/24/2031	5/3/2030
tblConstructionPhase	PhaseStartDate	5/20/2031	5/3/2030
tblConstructionPhase	PhaseStartDate	6/13/2031	9/3/2030
tblConstructionPhase	PhaseStartDate	8/31/2028	10/31/2028
tblConstructionPhase	PhaseStartDate	8/31/2028	10/31/2028
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	7,910.00	180.00
tblTripsAndVMT	HaulingTripNumber	0.00	60.00
tblTripsAndVMT	HaulingTripNumber	0.00	60.00
tblTripsAndVMT	HaulingTripNumber	0.00	60.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,000.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,000.00
tblTripsAndVMT	HaulingTripNumber	0.00	240.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblTripsAndVMT	HaulingTripNumber	0.00	360.00
tblTripsAndVMT	HaulingTripNumber	0.00	120.00
tblTripsAndVMT	HaulingTripNumber	0.00	60.00
tblTripsAndVMT	HaulingTripNumber	0.00	60.00
tblTripsAndVMT	HaulingTripNumber	0.00	120.00
tblTripsAndVMT	WorkerTripNumber	15.00	20.00
tblTripsAndVMT	WorkerTripNumber	3.00	10.00
tblTripsAndVMT	WorkerTripNumber	25.00	20.00
tblTripsAndVMT	WorkerTripNumber	18.00	20.00
tblTripsAndVMT	WorkerTripNumber	18.00	20.00
tblTripsAndVMT	WorkerTripNumber	73.00	20.00
tblTripsAndVMT	WorkerTripNumber	18.00	20.00
tblTripsAndVMT	WorkerTripNumber	25.00	20.00
tblTripsAndVMT	WorkerTripNumber	73.00	20.00
tblTripsAndVMT	WorkerTripNumber	73.00	10.00
tblTripsAndVMT	WorkerTripNumber	30.00	20.00

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2028	0.1329	1.1566	1.4940	3.1100e-003	0.0203	0.0525	0.0728	5.4100e-003	0.0486	0.0540	0.0000	273.8779	273.8779	0.0771	1.9200e-003	276.3770
2029	0.4596	4.0369	5.1639	0.0107	0.0687	0.1862	0.2549	0.0184	0.1717	0.1900	0.0000	937.1773	937.1773	0.2802	6.2000e-003	946.0299
2030	0.5080	1.8796	7.1032	0.0160	0.0878	0.0675	0.1552	0.0237	0.0674	0.0911	0.0000	1,380.6090	1,380.6090	0.0435	0.0115	1,385.1110
Maximum	**0.5080**	**4.0369**	**7.1032**	**0.0160**	**0.0878**	**0.1862**	**0.2549**	**0.0237**	**0.1717**	**0.1900**	**0.0000**	**1,380.6090**	**1,380.6090**	**0.2802**	**0.0115**	**1,385.1110**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2028	0.0387	0.1777	1.8924	3.1100e-003	0.0203	4.8900e-003	0.0252	5.4100e-003	4.8800e-003	0.0103	0.0000	273.8776	273.8776	0.0771	1.9200e-003	276.3767
2029	0.1328	0.6084	6.5450	0.0107	0.0687	0.0169	0.0856	0.0184	0.0168	0.0352	0.0000	937.1763	937.1763	0.2802	6.2000e-003	946.0288
2030	0.1623	0.8280	8.4938	0.0160	0.0878	0.0209	0.1087	0.0237	0.0209	0.0446	0.0000	1,380.6075	1,380.6075	0.0435	0.0115	1,385.1095
Maximum	**0.1623**	**0.8280**	**8.4938**	**0.0160**	**0.0878**	**0.0209**	**0.1087**	**0.0237**	**0.0209**	**0.0446**	**0.0000**	**1,380.6075**	**1,380.6075**	**0.2802**	**0.0115**	**1,385.1095**

Malabar Yard Construction - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**69.66**	**77.18**	**-23.04**	**0.00**	**0.00**	**86.07**	**54.58**	**0.00**	**85.22**	**73.15**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**8-3-2028**	**11-2-2028**	0.5560	0.0948
2	**11-3-2028**	**2-2-2029**	1.1326	0.1871
3	**2-3-2029**	**5-2-2029**	1.0949	0.1802
4	**5-3-2029**	**8-2-2029**	1.1310	0.1855
5	**8-3-2029**	**11-2-2029**	1.1314	0.1859
6	**11-3-2029**	**2-2-2030**	0.8721	0.1865
7	**2-3-2030**	**5-2-2030**	0.3934	0.1797
8	**5-3-2030**	**8-2-2030**	0.9740	0.4052
9	**8-3-2030**	**9-30-2030**	0.4769	0.1944
		Highest	1.1326	0.4052

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0137	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0137**	**0.0000**	**5.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0000e-004**	**1.0000e-004**	**0.0000**	**0.0000**	**1.1000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0137	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0137**	**0.0000**	**5.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.0000e-004**	**1.0000e-004**	**0.0000**	**0.0000**	**1.1000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	46th St Building Demo	Demolition	8/1/2028	10/30/2028	5	65	
2	49th St Utility Relocations	Trenching	10/31/2028	5/2/2030	5	393	
3	46th St Utility Relocations	Trenching	10/31/2028	5/2/2030	5	393	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	46th St Connector Track	Building Construction	5/3/2030	9/2/2030	5	87	
5	46th St Realigned Spur Track	Building Construction	7/6/2030	8/7/2030	5	23	
6	49th St Track Replacement	Building Construction	9/3/2030	9/30/2030	5	20	
7	49th St Road modifications	Paving	5/3/2030	11/4/2030	5	132	
8	46th St At Grade Crossing Enhancements	Paving	5/3/2030	7/3/2030	5	44	
9	46th St New At Grade Crossing	Paving	9/3/2030	11/4/2030	5	45	
10	49th St Bollard	Paving	11/5/2030	12/2/2030	5	20	
11	49th St Final Paving	Paving	12/3/2030	12/30/2030	5	20	
12	46th St Final Paving	Paving	12/3/2030	12/30/2030	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 4

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
49th St Utility Relocations	Cement and Mortar Mixers	1	8.00	9	0.56
49th St Utility Relocations	Other Construction Equipment	4	8.00	172	0.42
49th St Utility Relocations	Rubber Tired Dozers	0	8.00	247	0.40
49th St Utility Relocations	Rubber Tired Loaders	2	8.00	203	0.36
49th St Utility Relocations	Tractors/Loaders/Backhoes	0	8.00	97	0.37
46th St Utility Relocations	Cement and Mortar Mixers	1	8.00	9	0.56
46th St Utility Relocations	Other Construction Equipment	4	8.00	172	0.42
46th St Utility Relocations	Pavers	0	8.00	130	0.42
46th St Utility Relocations	Paving Equipment	0	6.00	132	0.36
46th St Utility Relocations	Rollers	0	6.00	80	0.38
46th St Utility Relocations	Rubber Tired Loaders	2	8.00	203	0.36

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

46th St Utility Relocations	Tractors/Loaders/Backhoes	0	8.00	97	0.37
46th St Connector Track	Cranes	0	7.00	231	0.29
46th St Connector Track	Crawler Tractors	1	8.00	212	0.43
46th St Connector Track	Excavators	2	8.00	158	0.38
46th St Connector Track	Forklifts	0	8.00	89	0.20
46th St Connector Track	Generator Sets	0	8.00	84	0.74
46th St Connector Track	Other Construction Equipment	6	8.00	172	0.42
46th St Connector Track	Other Material Handling Equipment	2	8.00	168	0.40
46th St Connector Track	Tractors/Loaders/Backhoes	0	7.00	97	0.37
46th St Connector Track	Welders	0	8.00	46	0.45
49th St Road modifications	Cement and Mortar Mixers	1	6.00	9	0.56
49th St Road modifications	Excavators	0	8.00	158	0.38
49th St Road modifications	Graders	0	8.00	187	0.41
49th St Road modifications	Other Construction Equipment	0	8.00	172	0.42
49th St Road modifications	Pavers	0	8.00	130	0.42
49th St Road modifications	Paving Equipment	2	6.00	132	0.36
49th St Road modifications	Rollers	2	6.00	80	0.38
49th St Road modifications	Rubber Tired Dozers	0	8.00	247	0.40
49th St Road modifications	Rubber Tired Loaders	1	8.00	203	0.36
49th St Road modifications	Tractors/Loaders/Backhoes	1	8.00	97	0.37
46th St At Grade Crossing Enhancements	Air Compressors	0	6.00	78	0.48
46th St At Grade Crossing Enhancements	Cement and Mortar Mixers	1	8.00	9	0.56
46th St At Grade Crossing Enhancements	Crawler Tractors	1	8.00	212	0.43
46th St At Grade Crossing Enhancements	Other Construction Equipment	6	8.00	172	0.42
46th St At Grade Crossing Enhancements	Other Material Handling Equipment	2	8.00	168	0.40
46th St At Grade Crossing Enhancements	Pavers	0	8.00	130	0.42
46th St At Grade Crossing Enhancements	Paving Equipment	0	6.00	132	0.36

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

46th St At Grade Crossing Enhancements	Rollers	0	6.00	80	0.38
46th St At Grade Crossing Enhancements	Tractors/Loaders/Backhoes	0	8.00	97	0.37
46th St New At Grade Crossing	Cement and Mortar Mixers	1	6.00	9	0.56
46th St New At Grade Crossing	Crawler Tractors	1	8.00	212	0.43
46th St New At Grade Crossing	Excavators	2	8.00	158	0.38
46th St New At Grade Crossing	Other Construction Equipment	6	8.00	172	0.42
46th St New At Grade Crossing	Other Material Handling Equipment	2	8.00	168	0.40
46th St New At Grade Crossing	Pavers	0	8.00	130	0.42
46th St New At Grade Crossing	Paving Equipment	0	6.00	132	0.36
46th St New At Grade Crossing	Rollers	0	6.00	80	0.38
46th St New At Grade Crossing	Tractors/Loaders/Backhoes	0	8.00	97	0.37
46th St Realigned Spur Track	Cement and Mortar Mixers	1	8.00	9	0.56
46th St Realigned Spur Track	Cranes	0	7.00	231	0.29
46th St Realigned Spur Track	Crawler Tractors	1	8.00	212	0.43
46th St Realigned Spur Track	Excavators	2	8.00	158	0.38
46th St Realigned Spur Track	Forklifts	0	8.00	89	0.20
46th St Realigned Spur Track	Generator Sets	0	8.00	84	0.74
46th St Realigned Spur Track	Other Construction Equipment	6	8.00	172	0.42
46th St Realigned Spur Track	Other Material Handling Equipment	2	8.00	168	0.40
46th St Realigned Spur Track	Tractors/Loaders/Backhoes	0	7.00	97	0.37
46th St Realigned Spur Track	Welders	1	8.00	46	0.45
49th St Track Replacement	Cranes	0	7.00	231	0.29
49th St Track Replacement	Forklifts	0	8.00	89	0.20
49th St Track Replacement	Generator Sets	0	8.00	84	0.74
49th St Track Replacement	Rubber Tired Loaders	2	8.00	203	0.36
49th St Track Replacement	Tractors/Loaders/Backhoes	1	8.00	97	0.37
49th St Track Replacement	Welders	1	8.00	46	0.45
49th St Bollard	Cement and Mortar Mixers	0	6.00	9	0.56

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

49th St Bollard	Pavers	0	8.00	130	0.42
49th St Bollard	Paving Equipment	0	6.00	132	0.36
49th St Bollard	Rollers	0	6.00	80	0.38
49th St Bollard	Tractors/Loaders/Backhoes	1	8.00	97	0.37
49th St Final Paving	Cement and Mortar Mixers	0	6.00	9	0.56
49th St Final Paving	Other Construction Equipment	4	8.00	172	0.42
49th St Final Paving	Pavers	0	8.00	130	0.42
49th St Final Paving	Paving Equipment	2	6.00	132	0.36
49th St Final Paving	Rollers	2	6.00	80	0.38
49th St Final Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37
46th St Building Demo	Concrete/Industrial Saws	1	8.00	81	0.73
46th St Building Demo	Excavators	0	8.00	158	0.38
46th St Building Demo	Other Construction Equipment	3	8.00	172	0.42
46th St Building Demo	Rubber Tired Dozers	0	8.00	247	0.40
46th St Building Demo	Rubber Tired Loaders	2	8.00	203	0.36
46th St Final Paving	Cement and Mortar Mixers	2	6.00	9	0.56
46th St Final Paving	Other Construction Equipment	4	8.00	172	0.42
46th St Final Paving	Pavers	0	8.00	130	0.42
46th St Final Paving	Paving Equipment	2	6.00	132	0.36
46th St Final Paving	Rollers	2	6.00	80	0.38
46th St Final Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
49th St Utility Relocations	7	20.00	0.00	1,000.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
46th St Utility Relocations	7	20.00	0.00	1,000.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
46th St Connector Track	11	20.00	29.00	240.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

49th St Road modifications	7	20.00	0.00	360.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
46th St At Grade Crossing Enhanceme	10	20.00	0.00	120.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
46th St New At Grade Crossing	12	20.00	0.00	120.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
46th St Realigned Spur Track	13	20.00	29.00	60.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
49th St Track Replacement	4	10.00	29.00	60.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
49th St Bollard	1	10.00	0.00	60.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
49th St Final Paving	8	20.00	0.00	60.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
46th St Building Demo	6	20.00	0.00	180.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
46th St Final Paving	10	20.00	0.00	60.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 46th St Building Demo - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0536	0.4638	0.6037	1.2100e-003		0.0210	0.0210		0.0196	0.0196	0.0000	106.1343	106.1343	0.0294	0.0000	106.8703
Total	**0.0536**	**0.4638**	**0.6037**	**1.2100e-003**		**0.0210**	**0.0210**		**0.0196**	**0.0196**	**0.0000**	**106.1343**	**106.1343**	**0.0294**	**0.0000**	**106.8703**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 46th St Building Demo - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.8000e-004	0.0110	3.2300e-003	5.0000e-005	1.5500e-003	8.0000e-005	1.6300e-003	4.3000e-004	8.0000e-005	5.0000e-004	0.0000	4.6756	4.6756	2.9000e-004	7.4000e-004	4.9045
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4900e-003	9.6000e-004	0.0156	5.0000e-005	7.1300e-003	3.0000e-005	7.1600e-003	1.8900e-003	3.0000e-005	1.9200e-003	0.0000	4.8041	4.8041	9.0000e-005	1.1000e-004	4.8382
Total	**1.6700e-003**	**0.0120**	**0.0188**	**1.0000e-004**	**8.6800e-003**	**1.1000e-004**	**8.7900e-003**	**2.3200e-003**	**1.1000e-004**	**2.4200e-003**	**0.0000**	**9.4796**	**9.4796**	**3.8000e-004**	**8.5000e-004**	**9.7427**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0145	0.0629	0.7694	1.2100e-003		1.9400e-003	1.9400e-003		1.9400e-003	1.9400e-003	0.0000	106.1341	106.1341	0.0294	0.0000	106.8702
Total	**0.0145**	**0.0629**	**0.7694**	**1.2100e-003**		**1.9400e-003**	**1.9400e-003**		**1.9400e-003**	**1.9400e-003**	**0.0000**	**106.1341**	**106.1341**	**0.0294**	**0.0000**	**106.8702**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 46th St Building Demo - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.8000e-004	0.0110	3.2300e-003	5.0000e-005	1.5500e-003	8.0000e-005	1.6300e-003	4.3000e-004	8.0000e-005	5.0000e-004	0.0000	4.6756	4.6756	2.9000e-004	7.4000e-004	4.9045
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4900e-003	9.6000e-004	0.0156	5.0000e-005	7.1300e-003	3.0000e-005	7.1600e-003	1.8900e-003	3.0000e-005	1.9200e-003	0.0000	4.8041	4.8041	9.0000e-005	1.1000e-004	4.8382
Total	**1.6700e-003**	**0.0120**	**0.0188**	**1.0000e-004**	**8.6800e-003**	**1.1000e-004**	**8.7900e-003**	**2.3200e-003**	**1.1000e-004**	**2.4200e-003**	**0.0000**	**9.4796**	**9.4796**	**3.8000e-004**	**8.5000e-004**	**9.7427**

3.3 49th St Utility Relocations - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0377	0.3329	0.4232	8.4000e-004		0.0156	0.0156		0.0144	0.0144	0.0000	72.9719	72.9719	0.0234	0.0000	73.5563
Total	**0.0377**	**0.3329**	**0.4232**	**8.4000e-004**		**0.0156**	**0.0156**		**0.0144**	**0.0144**	**0.0000**	**72.9719**	**72.9719**	**0.0234**	**0.0000**	**73.5563**

Malabar Yard Construction - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 49th St Utility Relocations - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1000e-004	6.8600e-003	2.0100e-003	3.0000e-005	9.6000e-004	5.0000e-005	1.0100e-003	2.6000e-004	5.0000e-005	3.1000e-004	0.0000	2.9082	2.9082	1.8000e-004	4.6000e-004	3.0506
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0100e-003	6.5000e-004	0.0105	4.0000e-005	4.8300e-003	2.0000e-005	4.8500e-003	1.2800e-003	2.0000e-005	1.3000e-003	0.0000	3.2520	3.2520	6.0000e-005	7.0000e-005	3.2751
Total	**1.1200e-003**	**7.5100e-003**	**0.0125**	**7.0000e-005**	**5.7900e-003**	**7.0000e-005**	**5.8600e-003**	**1.5400e-003**	**7.0000e-005**	**1.6100e-003**	**0.0000**	**6.1602**	**6.1602**	**2.4000e-004**	**5.3000e-004**	**6.3257**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0101	0.0439	0.5396	8.4000e-004		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	72.9718	72.9718	0.0234	0.0000	73.5563
Total	**0.0101**	**0.0439**	**0.5396**	**8.4000e-004**		**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**	**0.0000**	**72.9718**	**72.9718**	**0.0234**	**0.0000**	**73.5563**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 49th St Utility Relocations - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1000e-004	6.8600e-003	2.0100e-003	3.0000e-005	9.6000e-004	5.0000e-005	1.0100e-003	2.6000e-004	5.0000e-005	3.1000e-004	0.0000	2.9082	2.9082	1.8000e-004	4.6000e-004	3.0506
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0100e-003	6.5000e-004	0.0105	4.0000e-005	4.8300e-003	2.0000e-005	4.8500e-003	1.2800e-003	2.0000e-005	1.3000e-003	0.0000	3.2520	3.2520	6.0000e-005	7.0000e-005	3.2751
Total	**1.1200e-003**	**7.5100e-003**	**0.0125**	**7.0000e-005**	**5.7900e-003**	**7.0000e-005**	**5.8600e-003**	**1.5400e-003**	**7.0000e-005**	**1.6100e-003**	**0.0000**	**6.1602**	**6.1602**	**2.4000e-004**	**5.3000e-004**	**6.3257**

3.3 49th St Utility Relocations - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2235	1.9747	2.5103	4.9500e-003		0.0927	0.0927		0.0854	0.0854	0.0000	432.8558	432.8558	0.1387	0.0000	436.3229
Total	**0.2235**	**1.9747**	**2.5103**	**4.9500e-003**		**0.0927**	**0.0927**		**0.0854**	**0.0854**	**0.0000**	**432.8558**	**432.8558**	**0.1387**	**0.0000**	**436.3229**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 49th St Utility Relocations - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.6000e-004	0.0403	0.0120	1.7000e-004	5.7100e-003	3.0000e-004	6.0100e-003	1.5700e-003	2.8000e-004	1.8500e-003	0.0000	16.8935	16.8935	1.0800e-003	2.6900e-003	17.7216
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6600e-003	3.5500e-003	0.0597	2.1000e-004	0.0286	1.2000e-004	0.0288	7.6000e-003	1.1000e-004	7.7100e-003	0.0000	18.8394	18.8394	3.3000e-004	4.1000e-004	18.9705
Total	**6.3200e-003**	**0.0438**	**0.0716**	**3.8000e-004**	**0.0344**	**4.2000e-004**	**0.0348**	**9.1700e-003**	**3.9000e-004**	**9.5600e-003**	**0.0000**	**35.7329**	**35.7329**	**1.4100e-003**	**3.1000e-003**	**36.6921**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0601	0.2604	3.2009	4.9500e-003		8.0100e-003	8.0100e-003		8.0100e-003	8.0100e-003	0.0000	432.8553	432.8553	0.1387	0.0000	436.3223
Total	**0.0601**	**0.2604**	**3.2009**	**4.9500e-003**		**8.0100e-003**	**8.0100e-003**		**8.0100e-003**	**8.0100e-003**	**0.0000**	**432.8553**	**432.8553**	**0.1387**	**0.0000**	**436.3223**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 49th St Utility Relocations - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.6000e-004	0.0403	0.0120	1.7000e-004	5.7100e-003	3.0000e-004	6.0100e-003	1.5700e-003	2.8000e-004	1.8500e-003	0.0000	16.8935	16.8935	1.0800e-003	2.6900e-003	17.7216
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6600e-003	3.5500e-003	0.0597	2.1000e-004	0.0286	1.2000e-004	0.0288	7.6000e-003	1.1000e-004	7.7100e-003	0.0000	18.8394	18.8394	3.3000e-004	4.1000e-004	18.9705
Total	**6.3200e-003**	**0.0438**	**0.0716**	**3.8000e-004**	**0.0344**	**4.2000e-004**	**0.0348**	**9.1700e-003**	**3.9000e-004**	**9.5600e-003**	**0.0000**	**35.7329**	**35.7329**	**1.4100e-003**	**3.1000e-003**	**36.6921**

3.3 49th St Utility Relocations - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0625	0.1934	0.8439	2.0600e-003		7.3900e-003	7.3900e-003		7.3900e-003	7.3900e-003	0.0000	176.1003	176.1003	4.9100e-003	0.0000	176.2231
Total	**0.0625**	**0.1934**	**0.8439**	**2.0600e-003**		**7.3900e-003**	**7.3900e-003**		**7.3900e-003**	**7.3900e-003**	**0.0000**	**176.1003**	**176.1003**	**4.9100e-003**	**0.0000**	**176.2231**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 49th St Utility Relocations - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.2000e-004	0.0134	4.0700e-003	6.0000e-005	1.9300e-003	1.0000e-004	2.0300e-003	5.3000e-004	9.0000e-005	6.2000e-004	0.0000	5.5790	5.5790	3.6000e-004	8.9000e-004	5.8528
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-003	1.1100e-003	0.0193	7.0000e-005	9.6500e-003	4.0000e-005	9.6900e-003	2.5600e-003	3.0000e-005	2.6000e-003	0.0000	6.2170	6.2170	1.0000e-004	1.3000e-004	6.2595
Total	**2.0200e-003**	**0.0145**	**0.0234**	**1.3000e-004**	**0.0116**	**1.4000e-004**	**0.0117**	**3.0900e-003**	**1.2000e-004**	**3.2200e-003**	**0.0000**	**11.7960**	**11.7960**	**4.6000e-004**	**1.0200e-003**	**12.1123**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0203	0.0878	1.0792	2.0600e-003		2.7000e-003	2.7000e-003		2.7000e-003	2.7000e-003	0.0000	176.1001	176.1001	4.9100e-003	0.0000	176.2228
Total	**0.0203**	**0.0878**	**1.0792**	**2.0600e-003**		**2.7000e-003**	**2.7000e-003**		**2.7000e-003**	**2.7000e-003**	**0.0000**	**176.1001**	**176.1001**	**4.9100e-003**	**0.0000**	**176.2228**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 49th St Utility Relocations - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.2000e-004	0.0134	4.0700e-003	6.0000e-005	1.9300e-003	1.0000e-004	2.0300e-003	5.3000e-004	9.0000e-005	6.2000e-004	0.0000	5.5790	5.5790	3.6000e-004	8.9000e-004	5.8528
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-003	1.1100e-003	0.0193	7.0000e-005	9.6500e-003	4.0000e-005	9.6900e-003	2.5600e-003	3.0000e-005	2.6000e-003	0.0000	6.2170	6.2170	1.0000e-004	1.3000e-004	6.2595
Total	**2.0200e-003**	**0.0145**	**0.0234**	**1.3000e-004**	**0.0116**	**1.4000e-004**	**0.0117**	**3.0900e-003**	**1.2000e-004**	**3.2200e-003**	**0.0000**	**11.7960**	**11.7960**	**4.6000e-004**	**1.0200e-003**	**12.1123**

3.4 46th St Utility Relocations - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0377	0.3329	0.4232	8.4000e-004		0.0156	0.0156		0.0144	0.0144	0.0000	72.9719	72.9719	0.0234	0.0000	73.5563
Total	**0.0377**	**0.3329**	**0.4232**	**8.4000e-004**		**0.0156**	**0.0156**		**0.0144**	**0.0144**	**0.0000**	**72.9719**	**72.9719**	**0.0234**	**0.0000**	**73.5563**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 46th St Utility Relocations - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1000e-004	6.8600e-003	2.0100e-003	3.0000e-005	9.6000e-004	5.0000e-005	1.0100e-003	2.6000e-004	5.0000e-005	3.1000e-004	0.0000	2.9082	2.9082	1.8000e-004	4.6000e-004	3.0506
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0100e-003	6.5000e-004	0.0105	4.0000e-005	4.8300e-003	2.0000e-005	4.8500e-003	1.2800e-003	2.0000e-005	1.3000e-003	0.0000	3.2520	3.2520	6.0000e-005	7.0000e-005	3.2751
Total	**1.1200e-003**	**7.5100e-003**	**0.0125**	**7.0000e-005**	**5.7900e-003**	**7.0000e-005**	**5.8600e-003**	**1.5400e-003**	**7.0000e-005**	**1.6100e-003**	**0.0000**	**6.1602**	**6.1602**	**2.4000e-004**	**5.3000e-004**	**6.3257**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0101	0.0439	0.5396	8.4000e-004		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	72.9718	72.9718	0.0234	0.0000	73.5563
Total	**0.0101**	**0.0439**	**0.5396**	**8.4000e-004**		**1.3500e-003**	**1.3500e-003**		**1.3500e-003**	**1.3500e-003**	**0.0000**	**72.9718**	**72.9718**	**0.0234**	**0.0000**	**73.5563**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 46th St Utility Relocations - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1000e-004	6.8600e-003	2.0100e-003	3.0000e-005	9.6000e-004	5.0000e-005	1.0100e-003	2.6000e-004	5.0000e-005	3.1000e-004	0.0000	2.9082	2.9082	1.8000e-004	4.6000e-004	3.0506
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0100e-003	6.5000e-004	0.0105	4.0000e-005	4.8300e-003	2.0000e-005	4.8500e-003	1.2800e-003	2.0000e-005	1.3000e-003	0.0000	3.2520	3.2520	6.0000e-005	7.0000e-005	3.2751
Total	**1.1200e-003**	**7.5100e-003**	**0.0125**	**7.0000e-005**	**5.7900e-003**	**7.0000e-005**	**5.8600e-003**	**1.5400e-003**	**7.0000e-005**	**1.6100e-003**	**0.0000**	**6.1602**	**6.1602**	**2.4000e-004**	**5.3000e-004**	**6.3257**

3.4 46th St Utility Relocations - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2235	1.9747	2.5103	4.9500e-003		0.0927	0.0927		0.0854	0.0854	0.0000	432.8558	432.8558	0.1387	0.0000	436.3229
Total	**0.2235**	**1.9747**	**2.5103**	**4.9500e-003**		**0.0927**	**0.0927**		**0.0854**	**0.0854**	**0.0000**	**432.8558**	**432.8558**	**0.1387**	**0.0000**	**436.3229**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 46th St Utility Relocations - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.6000e-004	0.0403	0.0120	1.7000e-004	5.7100e-003	3.0000e-004	6.0100e-003	1.5700e-003	2.8000e-004	1.8500e-003	0.0000	16.8935	16.8935	1.0800e-003	2.6900e-003	17.7216
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6600e-003	3.5500e-003	0.0597	2.1000e-004	0.0286	1.2000e-004	0.0288	7.6000e-003	1.1000e-004	7.7100e-003	0.0000	18.8394	18.8394	3.3000e-004	4.1000e-004	18.9705
Total	**6.3200e-003**	**0.0438**	**0.0716**	**3.8000e-004**	**0.0344**	**4.2000e-004**	**0.0348**	**9.1700e-003**	**3.9000e-004**	**9.5600e-003**	**0.0000**	**35.7329**	**35.7329**	**1.4100e-003**	**3.1000e-003**	**36.6921**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0601	0.2604	3.2009	4.9500e-003		8.0100e-003	8.0100e-003		8.0100e-003	8.0100e-003	0.0000	432.8553	432.8553	0.1387	0.0000	436.3223
Total	**0.0601**	**0.2604**	**3.2009**	**4.9500e-003**		**8.0100e-003**	**8.0100e-003**		**8.0100e-003**	**8.0100e-003**	**0.0000**	**432.8553**	**432.8553**	**0.1387**	**0.0000**	**436.3223**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 46th St Utility Relocations - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.6000e-004	0.0403	0.0120	1.7000e-004	5.7100e-003	3.0000e-004	6.0100e-003	1.5700e-003	2.8000e-004	1.8500e-003	0.0000	16.8935	16.8935	1.0800e-003	2.6900e-003	17.7216
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6600e-003	3.5500e-003	0.0597	2.1000e-004	0.0286	1.2000e-004	0.0288	7.6000e-003	1.1000e-004	7.7100e-003	0.0000	18.8394	18.8394	3.3000e-004	4.1000e-004	18.9705
Total	**6.3200e-003**	**0.0438**	**0.0716**	**3.8000e-004**	**0.0344**	**4.2000e-004**	**0.0348**	**9.1700e-003**	**3.9000e-004**	**9.5600e-003**	**0.0000**	**35.7329**	**35.7329**	**1.4100e-003**	**3.1000e-003**	**36.6921**

3.4 46th St Utility Relocations - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0625	0.1934	0.8439	2.0600e-003		7.3900e-003	7.3900e-003		7.3900e-003	7.3900e-003	0.0000	176.1003	176.1003	4.9100e-003	0.0000	176.2231
Total	**0.0625**	**0.1934**	**0.8439**	**2.0600e-003**		**7.3900e-003**	**7.3900e-003**		**7.3900e-003**	**7.3900e-003**	**0.0000**	**176.1003**	**176.1003**	**4.9100e-003**	**0.0000**	**176.2231**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 46th St Utility Relocations - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.2000e-004	0.0134	4.0700e-003	6.0000e-005	1.9300e-003	1.0000e-004	2.0300e-003	5.3000e-004	9.0000e-005	6.2000e-004	0.0000	5.5790	5.5790	3.6000e-004	8.9000e-004	5.8528
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-003	1.1100e-003	0.0193	7.0000e-005	9.6500e-003	4.0000e-005	9.6900e-003	2.5600e-003	3.0000e-005	2.6000e-003	0.0000	6.2170	6.2170	1.0000e-004	1.3000e-004	6.2595
Total	**2.0200e-003**	**0.0145**	**0.0234**	**1.3000e-004**	**0.0116**	**1.4000e-004**	**0.0117**	**3.0900e-003**	**1.2000e-004**	**3.2200e-003**	**0.0000**	**11.7960**	**11.7960**	**4.6000e-004**	**1.0200e-003**	**12.1123**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0203	0.0878	1.0792	2.0600e-003		2.7000e-003	2.7000e-003		2.7000e-003	2.7000e-003	0.0000	176.1001	176.1001	4.9100e-003	0.0000	176.2228
Total	**0.0203**	**0.0878**	**1.0792**	**2.0600e-003**		**2.7000e-003**	**2.7000e-003**		**2.7000e-003**	**2.7000e-003**	**0.0000**	**176.1001**	**176.1001**	**4.9100e-003**	**0.0000**	**176.2228**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 46th St Utility Relocations - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.2000e-004	0.0134	4.0700e-003	6.0000e-005	1.9300e-003	1.0000e-004	2.0300e-003	5.3000e-004	9.0000e-005	6.2000e-004	0.0000	5.5790	5.5790	3.6000e-004	8.9000e-004	5.8528
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-003	1.1100e-003	0.0193	7.0000e-005	9.6500e-003	4.0000e-005	9.6900e-003	2.5600e-003	3.0000e-005	2.6000e-003	0.0000	6.2170	6.2170	1.0000e-004	1.3000e-004	6.2595
Total	**2.0200e-003**	**0.0145**	**0.0234**	**1.3000e-004**	**0.0116**	**1.4000e-004**	**0.0117**	**3.0900e-003**	**1.2000e-004**	**3.2200e-003**	**0.0000**	**11.7960**	**11.7960**	**4.6000e-004**	**1.0200e-003**	**12.1123**

3.5 46th St Connector Track - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1142	0.3442	1.7785	3.5900e-003		0.0141	0.0141		0.0141	0.0141	0.0000	308.1543	308.1543	9.0500e-003	0.0000	308.3805
Total	**0.1142**	**0.3442**	**1.7785**	**3.5900e-003**		**0.0141**	**0.0141**		**0.0141**	**0.0141**	**0.0000**	**308.1543**	**308.1543**	**9.0500e-003**	**0.0000**	**308.3805**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 46th St Connector Track - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.4000e-004	0.0144	4.3600e-003	6.0000e-005	2.0700e-003	1.1000e-004	2.1700e-003	5.7000e-004	1.0000e-004	6.7000e-004	0.0000	5.9797	5.9797	3.9000e-004	9.5000e-004	6.2732
Vendor	1.2000e-003	0.0465	0.0170	2.0000e-004	7.9600e-003	2.6000e-004	8.2200e-003	2.3000e-003	2.5000e-004	2.5500e-003	0.0000	19.7300	19.7300	7.6000e-004	2.8800e-003	20.6065
Worker	1.7800e-003	1.1000e-003	0.0191	7.0000e-005	9.5500e-003	4.0000e-005	9.5800e-003	2.5300e-003	3.0000e-005	2.5700e-003	0.0000	6.1463	6.1463	1.0000e-004	1.3000e-004	6.1884
Total	**3.2200e-003**	**0.0620**	**0.0405**	**3.3000e-004**	**0.0196**	**4.1000e-004**	**0.0200**	**5.4000e-003**	**3.8000e-004**	**5.7900e-003**	**0.0000**	**31.8560**	**31.8560**	**1.2500e-003**	**3.9600e-003**	**33.0680**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0359	0.1554	2.1066	3.5900e-003		4.7800e-003	4.7800e-003		4.7800e-003	4.7800e-003	0.0000	308.1539	308.1539	9.0500e-003	0.0000	308.3801
Total	**0.0359**	**0.1554**	**2.1066**	**3.5900e-003**		**4.7800e-003**	**4.7800e-003**		**4.7800e-003**	**4.7800e-003**	**0.0000**	**308.1539**	**308.1539**	**9.0500e-003**	**0.0000**	**308.3801**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 46th St Connector Track - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.4000e-004	0.0144	4.3600e-003	6.0000e-005	2.0700e-003	1.1000e-004	2.1700e-003	5.7000e-004	1.0000e-004	6.7000e-004	0.0000	5.9797	5.9797	3.9000e-004	9.5000e-004	6.2732
Vendor	1.2000e-003	0.0465	0.0170	2.0000e-004	7.9600e-003	2.6000e-004	8.2200e-003	2.3000e-003	2.5000e-004	2.5500e-003	0.0000	19.7300	19.7300	7.6000e-004	2.8800e-003	20.6065
Worker	1.7800e-003	1.1000e-003	0.0191	7.0000e-005	9.5500e-003	4.0000e-005	9.5800e-003	2.5300e-003	3.0000e-005	2.5700e-003	0.0000	6.1463	6.1463	1.0000e-004	1.3000e-004	6.1884
Total	**3.2200e-003**	**0.0620**	**0.0405**	**3.3000e-004**	**0.0196**	**4.1000e-004**	**0.0200**	**5.4000e-003**	**3.8000e-004**	**5.7900e-003**	**0.0000**	**31.8560**	**31.8560**	**1.2500e-003**	**3.9600e-003**	**33.0680**

3.6 46th St Realigned Spur Track - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0327	0.1090	0.4921	9.9000e-004		4.0900e-003	4.0900e-003		4.0900e-003	4.0900e-003	0.0000	84.1576	84.1576	2.6000e-003	0.0000	84.2226
Total	**0.0327**	**0.1090**	**0.4921**	**9.9000e-004**		**4.0900e-003**	**4.0900e-003**		**4.0900e-003**	**4.0900e-003**	**0.0000**	**84.1576**	**84.1576**	**2.6000e-003**	**0.0000**	**84.2226**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 46th St Realigned Spur Track - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	3.6000e-003	1.0900e-003	1.0000e-005	5.2000e-004	3.0000e-005	5.4000e-004	1.4000e-004	3.0000e-005	1.7000e-004	0.0000	1.4949	1.4949	1.0000e-004	2.4000e-004	1.5683
Vendor	3.2000e-004	0.0123	4.5000e-003	5.0000e-005	2.1000e-003	7.0000e-005	2.1700e-003	6.1000e-004	7.0000e-005	6.7000e-004	0.0000	5.2160	5.2160	2.0000e-004	7.6000e-004	5.4477
Worker	4.7000e-004	2.9000e-004	5.0400e-003	2.0000e-005	2.5200e-003	1.0000e-005	2.5300e-003	6.7000e-004	1.0000e-005	6.8000e-004	0.0000	1.6249	1.6249	3.0000e-005	3.0000e-005	1.6360
Total	**8.5000e-004**	**0.0162**	**0.0106**	**8.0000e-005**	**5.1400e-003**	**1.1000e-004**	**5.2400e-003**	**1.4200e-003**	**1.1000e-004**	**1.5200e-003**	**0.0000**	**8.3358**	**8.3358**	**3.3000e-004**	**1.0300e-003**	**8.6520**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.9800e-003	0.0526	0.5741	9.9000e-004		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	84.1575	84.1575	2.6000e-003	0.0000	84.2225
Total	**9.9800e-003**	**0.0526**	**0.5741**	**9.9000e-004**		**1.3000e-003**	**1.3000e-003**		**1.3000e-003**	**1.3000e-003**	**0.0000**	**84.1575**	**84.1575**	**2.6000e-003**	**0.0000**	**84.2225**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 46th St Realigned Spur Track - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	3.6000e-003	1.0900e-003	1.0000e-005	5.2000e-004	3.0000e-005	5.4000e-004	1.4000e-004	3.0000e-005	1.7000e-004	0.0000	1.4949	1.4949	1.0000e-004	2.4000e-004	1.5683
Vendor	3.2000e-004	0.0123	4.5000e-003	5.0000e-005	2.1000e-003	7.0000e-005	2.1700e-003	6.1000e-004	7.0000e-005	6.7000e-004	0.0000	5.2160	5.2160	2.0000e-004	7.6000e-004	5.4477
Worker	4.7000e-004	2.9000e-004	5.0400e-003	2.0000e-005	2.5200e-003	1.0000e-005	2.5300e-003	6.7000e-004	1.0000e-005	6.8000e-004	0.0000	1.6249	1.6249	3.0000e-005	3.0000e-005	1.6360
Total	**8.5000e-004**	**0.0162**	**0.0106**	**8.0000e-005**	**5.1400e-003**	**1.1000e-004**	**5.2400e-003**	**1.4200e-003**	**1.1000e-004**	**1.5200e-003**	**0.0000**	**8.3358**	**8.3358**	**3.3000e-004**	**1.0300e-003**	**8.6520**

3.7 49th St Track Replacement - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.7700e-003	0.0391	0.0688	2.2000e-004		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	18.4356	18.4356	6.9000e-004	0.0000	18.4529
Total	**8.7700e-003**	**0.0391**	**0.0688**	**2.2000e-004**		**9.2000e-004**	**9.2000e-004**		**9.2000e-004**	**9.2000e-004**	**0.0000**	**18.4356**	**18.4356**	**6.9000e-004**	**0.0000**	**18.4529**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 49th St Track Replacement - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	3.6000e-003	1.0900e-003	1.0000e-005	5.2000e-004	3.0000e-005	5.4000e-004	1.4000e-004	3.0000e-005	1.7000e-004	0.0000	1.4949	1.4949	1.0000e-004	2.4000e-004	1.5683
Vendor	2.8000e-004	0.0107	3.9100e-003	5.0000e-005	1.8300e-003	6.0000e-005	1.8900e-003	5.3000e-004	6.0000e-005	5.9000e-004	0.0000	4.5356	4.5356	1.7000e-004	6.6000e-004	4.7371
Worker	2.0000e-004	1.3000e-004	2.1900e-003	1.0000e-005	1.1000e-003	0.0000	1.1000e-003	2.9000e-004	0.0000	3.0000e-004	0.0000	0.7065	0.7065	1.0000e-005	2.0000e-005	0.7113
Total	**5.4000e-004**	**0.0144**	**7.1900e-003**	**7.0000e-005**	**3.4500e-003**	**9.0000e-005**	**3.5300e-003**	**9.6000e-004**	**9.0000e-005**	**1.0600e-003**	**0.0000**	**6.7370**	**6.7370**	**2.8000e-004**	**9.2000e-004**	**7.0167**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3600e-003	0.0184	0.0951	2.2000e-004		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	18.4356	18.4356	6.9000e-004	0.0000	18.4529
Total	**2.3600e-003**	**0.0184**	**0.0951**	**2.2000e-004**		**2.9000e-004**	**2.9000e-004**		**2.9000e-004**	**2.9000e-004**	**0.0000**	**18.4356**	**18.4356**	**6.9000e-004**	**0.0000**	**18.4529**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.7 49th St Track Replacement - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	3.6000e-003	1.0900e-003	1.0000e-005	5.2000e-004	3.0000e-005	5.4000e-004	1.4000e-004	3.0000e-005	1.7000e-004	0.0000	1.4949	1.4949	1.0000e-004	2.4000e-004	1.5683
Vendor	2.8000e-004	0.0107	3.9100e-003	5.0000e-005	1.8300e-003	6.0000e-005	1.8900e-003	5.3000e-004	6.0000e-005	5.9000e-004	0.0000	4.5356	4.5356	1.7000e-004	6.6000e-004	4.7371
Worker	2.0000e-004	1.3000e-004	2.1900e-003	1.0000e-005	1.1000e-003	0.0000	1.1000e-003	2.9000e-004	0.0000	3.0000e-004	0.0000	0.7065	0.7065	1.0000e-005	2.0000e-005	0.7113
Total	**5.4000e-004**	**0.0144**	**7.1900e-003**	**7.0000e-005**	**3.4500e-003**	**9.0000e-005**	**3.5300e-003**	**9.6000e-004**	**9.0000e-005**	**1.0600e-003**	**0.0000**	**6.7370**	**6.7370**	**2.8000e-004**	**9.2000e-004**	**7.0167**

3.8 49th St Road modifications - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0721	0.3584	0.7343	1.6100e-003		0.0131	0.0131		0.0131	0.0131	0.0000	137.8064	137.8064	5.7900e-003	0.0000	137.9512
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0721**	**0.3584**	**0.7343**	**1.6100e-003**		**0.0131**	**0.0131**		**0.0131**	**0.0131**	**0.0000**	**137.8064**	**137.8064**	**5.7900e-003**	**0.0000**	**137.9512**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.8 49th St Road modifications - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.6000e-004	0.0216	6.5400e-003	9.0000e-005	3.1000e-003	1.6000e-004	3.2600e-003	8.5000e-004	1.5000e-004	1.0000e-003	0.0000	8.9696	8.9696	5.9000e-004	1.4300e-003	9.4098
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-003	1.6700e-003	0.0289	1.0000e-004	0.0145	5.0000e-005	0.0145	3.8500e-003	5.0000e-005	3.9000e-003	0.0000	9.3255	9.3255	1.6000e-004	2.0000e-004	9.3892
Total	**3.0600e-003**	**0.0233**	**0.0355**	**1.9000e-004**	**0.0176**	**2.1000e-004**	**0.0178**	**4.7000e-003**	**2.0000e-004**	**4.9000e-003**	**0.0000**	**18.2951**	**18.2951**	**7.5000e-004**	**1.6300e-003**	**18.7990**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0158	0.0684	0.8451	1.6100e-003		2.1000e-003	2.1000e-003		2.1000e-003	2.1000e-003	0.0000	137.8063	137.8063	5.7900e-003	0.0000	137.9510
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0158**	**0.0684**	**0.8451**	**1.6100e-003**		**2.1000e-003**	**2.1000e-003**		**2.1000e-003**	**2.1000e-003**	**0.0000**	**137.8063**	**137.8063**	**5.7900e-003**	**0.0000**	**137.9510**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.8 49th St Road modifications - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.6000e-004	0.0216	6.5400e-003	9.0000e-005	3.1000e-003	1.6000e-004	3.2600e-003	8.5000e-004	1.5000e-004	1.0000e-003	0.0000	8.9696	8.9696	5.9000e-004	1.4300e-003	9.4098
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-003	1.6700e-003	0.0289	1.0000e-004	0.0145	5.0000e-005	0.0145	3.8500e-003	5.0000e-005	3.9000e-003	0.0000	9.3255	9.3255	1.6000e-004	2.0000e-004	9.3892
Total	**3.0600e-003**	**0.0233**	**0.0355**	**1.9000e-004**	**0.0176**	**2.1000e-004**	**0.0178**	**4.7000e-003**	**2.0000e-004**	**4.9000e-003**	**0.0000**	**18.2951**	**18.2951**	**7.5000e-004**	**1.6300e-003**	**18.7990**

3.9 46th St At Grade Crossing Enhancements - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0491	0.1577	0.7496	1.5500e-003		6.3900e-003	6.3900e-003		6.3900e-003	6.3900e-003	0.0000	132.8354	132.8354	3.8800e-003	0.0000	132.9323
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0491**	**0.1577**	**0.7496**	**1.5500e-003**		**6.3900e-003**	**6.3900e-003**		**6.3900e-003**	**6.3900e-003**	**0.0000**	**132.8354**	**132.8354**	**3.8800e-003**	**0.0000**	**132.9323**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.9 46th St At Grade Crossing Enhancements - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	7.2000e-003	2.1800e-003	3.0000e-005	1.0300e-003	5.0000e-005	1.0900e-003	2.8000e-004	5.0000e-005	3.3000e-004	0.0000	2.9899	2.9899	2.0000e-004	4.8000e-004	3.1366
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-004	5.6000e-004	9.6500e-003	3.0000e-005	4.8300e-003	2.0000e-005	4.8500e-003	1.2800e-003	2.0000e-005	1.3000e-003	0.0000	3.1085	3.1085	5.0000e-005	7.0000e-005	3.1298
Total	**1.0200e-003**	**7.7600e-003**	**0.0118**	**6.0000e-005**	**5.8600e-003**	**7.0000e-005**	**5.9400e-003**	**1.5600e-003**	**7.0000e-005**	**1.6300e-003**	**0.0000**	**6.0984**	**6.0984**	**2.5000e-004**	**5.5000e-004**	**6.2663**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0153	0.0665	0.8930	1.5500e-003		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	132.8352	132.8352	3.8800e-003	0.0000	132.9322
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0153**	**0.0665**	**0.8930**	**1.5500e-003**		**2.0500e-003**	**2.0500e-003**		**2.0500e-003**	**2.0500e-003**	**0.0000**	**132.8352**	**132.8352**	**3.8800e-003**	**0.0000**	**132.9322**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.9 46th St At Grade Crossing Enhancements - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	7.2000e-003	2.1800e-003	3.0000e-005	1.0300e-003	5.0000e-005	1.0900e-003	2.8000e-004	5.0000e-005	3.3000e-004	0.0000	2.9899	2.9899	2.0000e-004	4.8000e-004	3.1366
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-004	5.6000e-004	9.6500e-003	3.0000e-005	4.8300e-003	2.0000e-005	4.8500e-003	1.2800e-003	2.0000e-005	1.3000e-003	0.0000	3.1085	3.1085	5.0000e-005	7.0000e-005	3.1298
Total	**1.0200e-003**	**7.7600e-003**	**0.0118**	**6.0000e-005**	**5.8600e-003**	**7.0000e-005**	**5.9400e-003**	**1.5600e-003**	**7.0000e-005**	**1.6300e-003**	**0.0000**	**6.0984**	**6.0984**	**2.5000e-004**	**5.5000e-004**	**6.2663**

3.10 46th St New At Grade Crossing - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0601	0.1843	0.9251	1.8700e-003		7.5500e-003	7.5500e-003		7.5500e-003	7.5500e-003	0.0000	160.1635	160.1635	4.7600e-003	0.0000	160.2825
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0601**	**0.1843**	**0.9251**	**1.8700e-003**		**7.5500e-003**	**7.5500e-003**		**7.5500e-003**	**7.5500e-003**	**0.0000**	**160.1635**	**160.1635**	**4.7600e-003**	**0.0000**	**160.2825**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.10 46th St New At Grade Crossing - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	7.2000e-003	2.1800e-003	3.0000e-005	1.0300e-003	5.0000e-005	1.0900e-003	2.8000e-004	5.0000e-005	3.3000e-004	0.0000	2.9899	2.9899	2.0000e-004	4.8000e-004	3.1366
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.2000e-004	5.7000e-004	9.8700e-003	3.0000e-005	4.9400e-003	2.0000e-005	4.9600e-003	1.3100e-003	2.0000e-005	1.3300e-003	0.0000	3.1791	3.1791	5.0000e-005	7.0000e-005	3.2009
Total	**1.0400e-003**	**7.7700e-003**	**0.0121**	**6.0000e-005**	**5.9700e-003**	**7.0000e-005**	**6.0500e-003**	**1.5900e-003**	**7.0000e-005**	**1.6600e-003**	**0.0000**	**6.1690**	**6.1690**	**2.5000e-004**	**5.5000e-004**	**6.3375**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0186	0.0804	1.0896	1.8700e-003		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	160.1633	160.1633	4.7600e-003	0.0000	160.2823
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0186**	**0.0804**	**1.0896**	**1.8700e-003**		**2.4700e-003**	**2.4700e-003**		**2.4700e-003**	**2.4700e-003**	**0.0000**	**160.1633**	**160.1633**	**4.7600e-003**	**0.0000**	**160.2823**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.10 46th St New At Grade Crossing - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	7.2000e-003	2.1800e-003	3.0000e-005	1.0300e-003	5.0000e-005	1.0900e-003	2.8000e-004	5.0000e-005	3.3000e-004	0.0000	2.9899	2.9899	2.0000e-004	4.8000e-004	3.1366
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.2000e-004	5.7000e-004	9.8700e-003	3.0000e-005	4.9400e-003	2.0000e-005	4.9600e-003	1.3100e-003	2.0000e-005	1.3300e-003	0.0000	3.1791	3.1791	5.0000e-005	7.0000e-005	3.2009
Total	**1.0400e-003**	**7.7700e-003**	**0.0121**	**6.0000e-005**	**5.9700e-003**	**7.0000e-005**	**6.0500e-003**	**1.5900e-003**	**7.0000e-005**	**1.6600e-003**	**0.0000**	**6.1690**	**6.1690**	**2.5000e-004**	**5.5000e-004**	**6.3375**

3.11 49th St Bollard - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7200e-003	0.0103	0.0235	4.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	3.2634	3.2634	1.4000e-004	0.0000	3.2669
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.7200e-003**	**0.0103**	**0.0235**	**4.0000e-005**		**1.9000e-004**	**1.9000e-004**		**1.9000e-004**	**1.9000e-004**	**0.0000**	**3.2634**	**3.2634**	**1.4000e-004**	**0.0000**	**3.2669**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.11 49th St Bollard - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	3.6000e-003	1.0900e-003	1.0000e-005	5.2000e-004	3.0000e-005	5.4000e-004	1.4000e-004	3.0000e-005	1.7000e-004	0.0000	1.4949	1.4949	1.0000e-004	2.4000e-004	1.5683
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.3000e-004	2.1900e-003	1.0000e-005	1.1000e-003	0.0000	1.1000e-003	2.9000e-004	0.0000	3.0000e-004	0.0000	0.7065	0.7065	1.0000e-005	2.0000e-005	0.7113
Total	**2.6000e-004**	**3.7300e-003**	**3.2800e-003**	**2.0000e-005**	**1.6200e-003**	**3.0000e-005**	**1.6400e-003**	**4.3000e-004**	**3.0000e-005**	**4.7000e-004**	**0.0000**	**2.2014**	**2.2014**	**1.1000e-004**	**2.6000e-004**	**2.2796**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8000e-004	1.6500e-003	0.0234	4.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	3.2634	3.2634	1.4000e-004	0.0000	3.2668
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.8000e-004**	**1.6500e-003**	**0.0234**	**4.0000e-005**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**3.2634**	**3.2634**	**1.4000e-004**	**0.0000**	**3.2668**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.11 49th St Bollard - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	3.6000e-003	1.0900e-003	1.0000e-005	5.2000e-004	3.0000e-005	5.4000e-004	1.4000e-004	3.0000e-005	1.7000e-004	0.0000	1.4949	1.4949	1.0000e-004	2.4000e-004	1.5683
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.3000e-004	2.1900e-003	1.0000e-005	1.1000e-003	0.0000	1.1000e-003	2.9000e-004	0.0000	3.0000e-004	0.0000	0.7065	0.7065	1.0000e-005	2.0000e-005	0.7113
Total	**2.6000e-004**	**3.7300e-003**	**3.2800e-003**	**2.0000e-005**	**1.6200e-003**	**3.0000e-005**	**1.6400e-003**	**4.3000e-004**	**3.0000e-005**	**4.7000e-004**	**0.0000**	**2.2014**	**2.2014**	**1.1000e-004**	**2.6000e-004**	**2.2796**

3.12 49th St Final Paving - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0143	0.0562	0.2302	4.3000e-004		2.3800e-003	2.3800e-003		2.3800e-003	2.3800e-003	0.0000	36.9022	36.9022	1.1400e-003	0.0000	36.9307
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0143**	**0.0562**	**0.2302**	**4.3000e-004**		**2.3800e-003**	**2.3800e-003**		**2.3800e-003**	**2.3800e-003**	**0.0000**	**36.9022**	**36.9022**	**1.1400e-003**	**0.0000**	**36.9307**

Malabar Yard Construction - South Coast AQMD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.12 49th St Final Paving - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	3.6000e-003	1.0900e-003	1.0000e-005	5.2000e-004	3.0000e-005	5.4000e-004	1.4000e-004	3.0000e-005	1.7000e-004	0.0000	1.4949	1.4949	1.0000e-004	2.4000e-004	1.5683
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	2.5000e-004	4.3800e-003	2.0000e-005	2.1900e-003	1.0000e-005	2.2000e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.4130	1.4130	2.0000e-005	3.0000e-005	1.4226
Total	**4.7000e-004**	**3.8500e-003**	**5.4700e-003**	**3.0000e-005**	**2.7100e-003**	**4.0000e-005**	**2.7400e-003**	**7.2000e-004**	**4.0000e-005**	**7.6000e-004**	**0.0000**	**2.9079**	**2.9079**	**1.2000e-004**	**2.7000e-004**	**2.9909**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.2900e-003	0.0186	0.2648	4.3000e-004		5.7000e-004	5.7000e-004		5.7000e-004	5.7000e-004	0.0000	36.9021	36.9021	1.1400e-003	0.0000	36.9306
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.2900e-003**	**0.0186**	**0.2648**	**4.3000e-004**		**5.7000e-004**	**5.7000e-004**		**5.7000e-004**	**5.7000e-004**	**0.0000**	**36.9021**	**36.9021**	**1.1400e-003**	**0.0000**	**36.9306**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.12 49th St Final Paving - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	3.6000e-003	1.0900e-003	1.0000e-005	5.2000e-004	3.0000e-005	5.4000e-004	1.4000e-004	3.0000e-005	1.7000e-004	0.0000	1.4949	1.4949	1.0000e-004	2.4000e-004	1.5683
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	2.5000e-004	4.3800e-003	2.0000e-005	2.1900e-003	1.0000e-005	2.2000e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.4130	1.4130	2.0000e-005	3.0000e-005	1.4226
Total	**4.7000e-004**	**3.8500e-003**	**5.4700e-003**	**3.0000e-005**	**2.7100e-003**	**4.0000e-005**	**2.7400e-003**	**7.2000e-004**	**4.0000e-005**	**7.6000e-004**	**0.0000**	**2.9079**	**2.9079**	**1.2000e-004**	**2.7000e-004**	**2.9909**

3.13 46th St Final Paving - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0151	0.0617	0.2348	4.4000e-004		2.5900e-003	2.5900e-003		2.5900e-003	2.5900e-003	0.0000	37.5896	37.5896	1.2100e-003	0.0000	37.6199
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0151**	**0.0617**	**0.2348**	**4.4000e-004**		**2.5900e-003**	**2.5900e-003**		**2.5900e-003**	**2.5900e-003**	**0.0000**	**37.5896**	**37.5896**	**1.2100e-003**	**0.0000**	**37.6199**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.13 46th St Final Paving - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	3.6000e-003	1.0900e-003	1.0000e-005	5.2000e-004	3.0000e-005	5.4000e-004	1.4000e-004	3.0000e-005	1.7000e-004	0.0000	1.4949	1.4949	1.0000e-004	2.4000e-004	1.5683
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	2.5000e-004	4.3800e-003	2.0000e-005	2.1900e-003	1.0000e-005	2.2000e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.4130	1.4130	2.0000e-005	3.0000e-005	1.4226
Total	**4.7000e-004**	**3.8500e-003**	**5.4700e-003**	**3.0000e-005**	**2.7100e-003**	**4.0000e-005**	**2.7400e-003**	**7.2000e-004**	**4.0000e-005**	**7.6000e-004**	**0.0000**	**2.9079**	**2.9079**	**1.2000e-004**	**2.7000e-004**	**2.9909**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.2900e-003	0.0186	0.2648	4.4000e-004		5.7000e-004	5.7000e-004		5.7000e-004	5.7000e-004	0.0000	37.5895	37.5895	1.2100e-003	0.0000	37.6198
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.2900e-003**	**0.0186**	**0.2648**	**4.4000e-004**		**5.7000e-004**	**5.7000e-004**		**5.7000e-004**	**5.7000e-004**	**0.0000**	**37.5895**	**37.5895**	**1.2100e-003**	**0.0000**	**37.6198**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.13 46th St Final Paving - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	3.6000e-003	1.0900e-003	1.0000e-005	5.2000e-004	3.0000e-005	5.4000e-004	1.4000e-004	3.0000e-005	1.7000e-004	0.0000	1.4949	1.4949	1.0000e-004	2.4000e-004	1.5683
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	2.5000e-004	4.3800e-003	2.0000e-005	2.1900e-003	1.0000e-005	2.2000e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.4130	1.4130	2.0000e-005	3.0000e-005	1.4226
Total	**4.7000e-004**	**3.8500e-003**	**5.4700e-003**	**3.0000e-005**	**2.7100e-003**	**4.0000e-005**	**2.7400e-003**	**7.2000e-004**	**4.0000e-005**	**7.6000e-004**	**0.0000**	**2.9079**	**2.9079**	**1.2000e-004**	**2.7000e-004**	**2.9909**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.536554	0.065121	0.188839	0.125865	0.023954	0.006945	0.012855	0.008856	0.000818	0.000466	0.025582	0.000769	0.003378

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0137	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004
Unmitigated	0.0137	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.4200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0113					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004
Total	**0.0137**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-004**	**1.0000e-004**	**0.0000**	**0.0000**	**1.1000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.4200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0113					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004
Total	**0.0137**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-004**	**1.0000e-004**	**0.0000**	**0.0000**	**1.1000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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Appendix E. Database Searches for Biological Resources

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901

In Reply Refer To:
Project Code: 2023-0128164
Project Name: Malabar Yard

September 12, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A biological assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a biological assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a biological assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found at the Fish and Wildlife Service's Endangered Species Consultation website at:

https://www.fws.gov/service/esa-section-7-consultation

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

PROJECT SUMMARY

Project Code: 2023-0128164
Project Name: Malabar Yard
Project Type: Railroad - Maintenance/Modification
Project Description: A part of the LinkUS project
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.999088,-118.22844891461023,14z

Counties: Los Angeles County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

BIRDS

NAME	STATUS
Coastal California Gnatcatcher *Polioptila californica californica*	Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/8178

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency:	HDR Engineering Inc
Name:	Ronell Santos
Address:	591 Camino de la Reina
Address Line 2:	Suite 300
City:	San Diego
State:	CA
Zip:	92108
Email	ronell.santos@hdrinc.com
Phone:	8587128254

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901
http://www.fws.gov/carlsbad/

In Reply Refer To: February 03, 2021
Consultation Code: 08ECAR00-2021-SLI-0559
Event Code: 08ECAR00-2021-E-01254
Project Name: Link US Malabar Yard Study Area

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

Project Summary

Consultation Code: 08ECAR00-2021-SLI-0559
Event Code: 08ECAR00-2021-E-01254
Project Name: Link US Malabar Yard Study Area
Project Type: TRANSPORTATION
Project Description: The main line track connection required to facilitate run through service for Metrolink, Amtrak, and future HSR trains associated with the Link US Project would result in permanent loss of storage track capacity at the north end of the BNSF West Bank Yard. To offset that loss, off site improvements to BNSF's Malabar Yard are required, including closure of the at grade railroad crossing at 49th Street and a new track connection along 46th Street.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@34.00084425,-118.22494725598202,14z

Counties: Los Angeles County, California

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Coastal California Gnatcatcher *Polioptila californica californica* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8178	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Los Angeles (3411812) OR Hollywood (3411813) OR Burbank (3411823) OR Pasadena (3411822) OR El Monte (3411811) OR Mt. Wilson (3411821) OR Whittier (3311881) OR South Gate (3311882) OR Inglewood (3311883))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
Aimophila ruficeps canescens southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S3	WL
Anaxyrus californicus arroyo toad	AAABB01230	Endangered	None	G2G3	S2S3	SSC
Anniella spp. California legless lizard	ARACC01070	None	None	G3G4	S3S4	SSC
Anniella stebbinsi Southern California legless lizard	ARACC01060	None	None	G3	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Arctostaphylos glandulosa ssp. gabrielensis San Gabriel manzanita	PDERI042P0	None	None	G5T3	S3	1B.2
Arenaria paludicola marsh sandwort	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Aspidoscelis tigris stejnegeri coastal whiptail	ARACJ02143	None	None	G5T5	S3	SSC
Astragalus brauntonii Braunton's milk-vetch	PDFAB0F1G0	Endangered	None	G2	S2	1B.1
Astragalus tener var. titi coastal dunes milk-vetch	PDFAB0F8R2	Endangered	Endangered	G2T1	S1	1B.1
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Atriplex coulteri Coulter's saltbush	PDCHE040E0	None	None	G3	S1S2	1B.2
Atriplex parishii Parish's brittlescale	PDCHE041D0	None	None	G1G2	S1	1B.1
Atriplex serenana var. davidsonii Davidson's saltscale	PDCHE041T1	None	None	G5T1	S1	1B.2
Berberis nevinii Nevin's barberry	PDBER060A0	Endangered	Endangered	G1	S1	1B.1
Bombus crotchii Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
California Walnut Woodland California Walnut Woodland	CTT71210CA	None	None	G2	S2.1	
Calochortus clavatus var. gracilis slender mariposa-lily	PMLIL0D096	None	None	G4T2T3	S2S3	1B.2
Calochortus plummerae Plummer's mariposa-lily	PMLIL0D150	None	None	G4	S4	4.2
Calochortus weedii var. intermedius intermediate mariposa-lily	PMLIL0D1J1	None	None	G3G4T2	S2	1B.2
Calystegia felix lucky morning-glory	PDCON040P0	None	None	G1Q	S1	1B.1
Carolella busckana Busck's gallmoth	IILEM2X090	None	None	G1G3	SH	
Centromadia parryi ssp. australis southern tarplant	PDAST4R0P4	None	None	G3T2	S2	1B.1
Centromadia pungens ssp. laevis smooth tarplant	PDAST4R0R4	None	None	G3G4T2	S2	1B.1
Chorizanthe parryi var. fernandina San Fernando Valley spineflower	PDPGN040J1	None	Endangered	G2T1	S1	1B.1
Chorizanthe parryi var. parryi Parry's spineflower	PDPGN040J2	None	None	G3T2	S2	1B.1
Cladium californicum California saw-grass	PMCYP04010	None	None	G4	S2	2B.2
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
Coturnicops noveboracensis yellow rail	ABNME01010	None	None	G4	S1S2	SSC
Cuscuta obtusiflora var. glandulosa Peruvian dodder	PDCUS01111	None	None	G5T4?	SH	2B.2
Cypseloides niger black swift	ABNUA01010	None	None	G4	S2	SSC
Dodecahema leptoceras slender-horned spineflower	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
Dudleya multicaulis many-stemmed dudleya	PDCRA040H0	None	None	G2	S2	1B.2
Empidonax traillii extimus southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T2	S1	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eryngium aristulatum var. parishii San Diego button-celery	PDAPI0Z042	Endangered	Endangered	G5T1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
Galium grande San Gabriel bedstraw	PDRUB0N0V0	None	None	G1	S1	1B.2
Glyptostoma gabrielense San Gabriel chestnut	IMGASB1010	None	None	G2	S2	
Gonidea angulata western ridged mussel	IMBIV19010	None	None	G3	S1S2	
Helianthus nuttallii ssp. parishii Los Angeles sunflower	PDAST4N102	None	None	G5TX	SX	1A
Horkelia cuneata var. puberula mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1
Icteria virens yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
Lasionycteris noctivagans silver-haired bat	AMACC02010	None	None	G5	S3S4	
Lasiurus blossevillii western red bat	AMACC05060	None	None	G5	S3	SSC
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Lasiurus xanthinus western yellow bat	AMACC05070	None	None	G5	S3	SSC
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Lepidium virginicum var. robinsonii Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
Linanthus concinnus San Gabriel linanthus	PDPLM090D0	None	None	G2	S2	1B.2
Malacothamnus davidsonii Davidson's bush-mallow	PDMAL0Q040	None	None	G2	S2	1B.2
Microtus californicus stephensi south coast marsh vole	AMAFF11035	None	None	G5T1T2	S1S2	SSC
Muhlenbergia californica California muhly	PMPOA480A0	None	None	G4	S4	4.3
Nasturtium gambelii Gambel's water cress	PDBRA270V0	Endangered	Threatened	G1	S1	1B.1
Navarretia fossalis spreading navarretia	PDPLM0C080	Threatened	None	G2	S2	1B.1
Navarretia prostrata prostrate vernal pool navarretia	PDPLM0C0Q0	None	None	G2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Neotoma lepida intermedia San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Nyctinomops femorosaccus pocketed free-tailed bat	AMACD04010	None	None	G4	S3	SSC
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
Onychomys torridus ramona southern grasshopper mouse	AMAFF06022	None	None	G5T3	S3	SSC
Open Engelmann Oak Woodland Open Engelmann Oak Woodland	CTT71181CA	None	None	G2	S2.2	
Orcuttia californica California Orcutt grass	PMPOA4G010	Endangered	Endangered	G1	S1	1B.1
Palaeoxenus dohrni Dohrn's elegant eucnemid beetle	IICOL5K010	None	None	G3?	S3?	
Phacelia stellaris Brand's star phacelia	PDHYD0C510	None	None	G1	S1	1B.1
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T2Q	S2	SSC
Pseudognaphalium leucocephalum white rabbit-tobacco	PDAST440C0	None	None	G4	S2	2B.2
Quercus dumosa Nuttall's scrub oak	PDFAG050D0	None	None	G3	S3	1B.1
Rana muscosa southern mountain yellow-legged frog	AAABH01330	Endangered	Endangered	G1	S1	WL
Ribes divaricatum var. parishii Parish's gooseberry	PDGRO020F3	None	None	G5TX	SX	1A
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Riversidian Alluvial Fan Sage Scrub Riversidian Alluvial Fan Sage Scrub	CTT32720CA	None	None	G1	S1.1	
Scutellaria bolanderi ssp. austromontana southern mountains skullcap	PDLAM1U0A1	None	None	G4T3	S3	1B.2
Sidalcea neomexicana salt spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
Southern Coast Live Oak Riparian Forest Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
Southern Cottonwood Willow Riparian Forest Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	
Southern Sycamore Alder Riparian Woodland Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Symphyotrichum defoliatum San Bernardino aster	PDASTE80C0	None	None	G2	S2	1B.2
Symphyotrichum greatae Greata's aster	PDASTE80U0	None	None	G2	S2	1B.3
Taricha torosa Coast Range newt	AAAAF02032	None	None	G4	S4	SSC
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thamnophis hammondii two-striped gartersnake	ARADB36160	None	None	G4	S3S4	SSC
Thelypteris puberula var. sonorensis Sonoran maiden fern	PPTHE05192	None	None	G5T3	S2	2B.2
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	
Walnut Forest Walnut Forest	CTT81600CA	None	None	G1	S1.1	

Record Count: 91

From: Jay Ogawa - NOAA Federal
To: Austin, Shelly
Cc: Vick, Jenny; Macpherson, Patrick; Osorio, Mario
Subject: Re: Question regarding project-specific list of NMFS threatened and endangered species
Date: Tuesday, September 29, 2020 9:35:33 AM

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Shelly,

The species list remains valid. There isn't a set period of time for which the species list remains valid. New information indicating species presence or a change in critical habitat listing may result in the species list being updated.

On Tue, Sep 29, 2020 at 8:37 AM Austin, Shelly <Shelly.Austin@hdrinc.com> wrote:

> Hi Jay,
>
> I have a general question regarding how long lists of threatened and endangered species generated for a specific project from your office are valid for.
>
> Please see the attached correspondence regarding the Link US Project. The most recent update we received from you is dated January 21, 2020. Is that list still valid? If so, how long is it valid for? If not, can you please provide us with an update?
>
> Thank you,
>
> **Shelly Austin**
>
> *Senior Biologist*
>
> **HDR**
>
> 3230 El Camino Real Suite 200
> Irvine, CA 92602
> **D** 714.368.5657 **M** 714.454.9886
> shelly.austin@hdrinc.com
>
> hdrinc.com/follow-us

From:	Austin, Shelly
To:	jay.ogawa@noaa.gov
Cc:	Vick, Jenny; Macpherson, Patrick; Osorio, Mario
Subject:	Question regarding project-specific list of NMFS threatened and endangered species
Date:	Tuesday, September 29, 2020 8:37:00 AM
Attachments:	Appendix A3_Email from NOAA Re_ Link US Project Species List Request.pdf

Hi Jay,

I have a general question regarding how long lists of threatened and endangered species generated for a specific project from your office are valid for.

Please see the attached correspondence regarding the Link US Project. The most recent update we received from you is dated January 21, 2020. Is that list still valid? If so, how long is it valid for? If not, can you please provide us with an update?

Thank you,

Shelly Austin
Senior Biologist

HDR
3230 El Camino Real Suite 200
Irvine, CA 92602
D 714.368.5657 **M** 714.454.9886
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--
Jay Ogawa
Fish Biologist
NOAA Fisheries West Coast Region
U.S. Department of Commerce
Office: (562) 980-4061
jay.ogawa@noaa.gov
www.westcoast.fisheries.noaa.gov

From: Jay Ogawa - NOAA Federal
To: Austin, Shelly
Subject: Re: Link US Project Species List Request
Date: Tuesday, January 21, 2020 8:22:59 AM

Hi Shelly,

The species list sent in 2016 remains valid.

On Fri, Jan 17, 2020 at 12:20 PM Austin, Shelly <Shelly.Austin@hdrinc.com> wrote:

> Hi Jay,
>
> I'm emailing you as a follow-up to the email copied below dating from 2016. We are in the process of preparing an Environmental Impact Statement (the Environmental Impact Report was certified in 2019). As such, I would like to request an updated list of threatened or endangered species under jurisdiction of NOAA's National Marine Fisheries Service within the Los Angeles River from the intersection of S. Soto Street and E 37th Street northward for 4 miles (this is a larger study area than before because we have added a storage yard to the project located in the City of Vernon.
>
> Florence Chan is no longer with HDR, so please email the list directly to me at your earliest convenience.
>
> Shelly Austin
>
> *Senior Biologist*
>
> HDR
>
> 3230 El Camino Real Suite 200
> Irvine, CA 92602
> **D** 714.368.5657 **M** 714.454.9886
> shelly.austin@hdrinc.com
>
> hdrinc.com/follow-us
>
> **From:** Jay Ogawa - NOAA Federal <jay.ogawa@noaa.gov>
>
> **Date:** October 3, 2016 at 11:53:31 AM PDT
>
> **To:** <Florence.Chan@hdrinc.com>
>
> **Cc:** Anthony Spina - NOAA Federal <anthony.spina@noaa.gov>

Subject: Species List

Hi Florence,

This email responds to HDRs' September 29, 2016, request for a list of threatened or endangered species under jurisdiction of NOAA's National Marine Fisheries Service (NMFS) within the Los Angeles River from East 4th Street northward for 1.5-miles. The action area is within the federally endangered Southern California Distinct Population Segment of steelhead (*Oncorhynchus mykiss*), however NMFS does not expect this species to be present within the action area because NMFS is not aware of any record indicating the recent presence of steelhead in the Los Angeles River. Currently, critical habitat is not designated for steelhead in the Los Angeles River.

NMFS appreciates the opportunity to provide technical assistance to HDR. Please contact Jay Ogawa at (562) 980-4061 or via email at jay.ogawa@noaa.gov if you have a question concerning this email or if you require additional information.

--

Jay Ogawa

Fisheries Biologist

NOAA Fisheries West Coast Region

U.S. Department of Commerce

Office: (562) 980-4061

jay.ogawa@noaa.gov

www.westcoast.fisheries.noaa.gov

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